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Southwestern Warfare: Reality and Consequences

Steven A. LeBlanc, Institute of Archaeology, University of California, Los Angeles

FOR MOST PEOPLE, Southwestern archaeology inspires positive, peaceful images of a distant past. The ruins are spectacular and evocative, and some of the great art works of humankind are found among ancient artifacts and designs painted and pecked on rocks. A visit to the ruins inspires thoughts of survival in a harsh environment. We can imagine that religion and ceremony were the glue that held societies together, helping to emotionally buffer the inhabitants from the vagaries of climate and other factors beyond their control. The more we consider the obstacles they faced, the more we empathize with these people. That's why it is difficult to fathom, and even harder to accept, the idea that these same people engaged in warfare much of the time, that they participated in and were victims of massacres, and that ultimately their military conflicts contributed to the abandonment of much of the Southwest just prior to the Spanish entrada. Archaeologists have been hesitant to deal with the evidence for prehistoric warfare—some of which has been known and recognized for over a century.

Peaceful adaptation or cliff fortress? Balcony House cliff dwelling, Mesa Verde National Park. Photo by George Beam, courtesy of the Denver Public Library Western History Department (negative number GB-7906).

INTRODUCTION

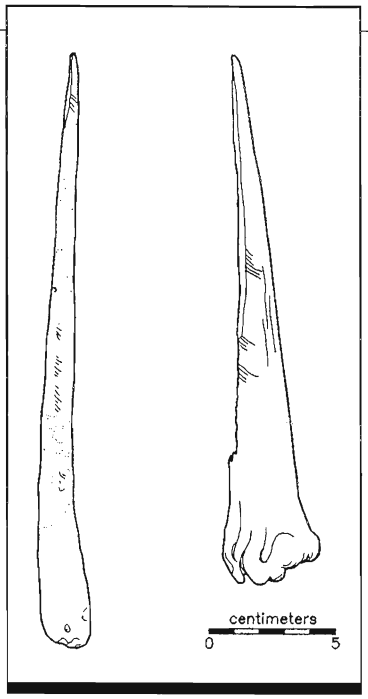
As this issue heads to press, NATO is bombing Kosovo daily and 33 nations around the world are involved in violent conflicts.

Archaeologists, and the public alike, often assume that life was more peaceful before modern society developed, and warfare in prehistory is often downplayed or overlooked. War is ubiquitous in human societies, and it behooves archaeologists to search for its traces in prehistory and consider its role in the development of human society.

Our lead article by Steven LeBlanc provides stimulating highlights from his new book, *Prehistoric Warfare in the American Southwest* (University of Utah Press, 1999). Many of the issues he presents are controversial, but the time for their debate is long overdue. Contributions by Ronald Towner and Jane Sliva on historic-period warfare and the weapons of war are also in this issue.

We cannot make war and violence disappear by ignoring them. If LeBlanc's assessment of the trajectory of warfare in the prehistoric Southwest is correct, perhaps we can learn from its disastrous consequences.

—Henry D. Wallace, Issue Editor



Left: Excavations in Cave 7, Grand Gulch, Utah, where over 100 people were massacred in Basketmaker II times. Wetherill excavation crew, 1893. Photo by Richard Wetherill, courtesy of University of Pennsylvania Museum (negative number S4-139872). Right: Bone daggers used in the massacre in Cave 7, Grand Gulch, Utah. Redrafted from Hurst and Turner (1993:163).

Our perception of early Southwestern warfare is also colored by our knowledge of the region's history. We are certainly aware of the Apache wars, the Pueblo Revolt, the conflicts between the Navajo and both the Spaniards and the Pueblos, and similar conflicts during the Historic period (see pages 8-9). When we look at these conflicts, we see as immediate causes the European intrusion, the availability of guns and horses, the demand for slaves and labor, and so forth. It is easy to conclude that historical warfare was related to the presence of Europeans. There is no reason to project these causes of war into the prehistoric past, hence no reason to expect to find prehistoric warfare. Certainly, we see the sedentary farmers in the Historic period being preyed upon, not trying to take over their neighbors' territory. We view them as inherently peaceful, if only left alone.

As reasonable as this scenario seems, it does not fit the facts in the Southwest or, for that matter, in the rest of the world. Much of the warfare during the last few centuries can be attributed to the impact of colonialism (including even Roman and other earlier colonialism). Yet when we look carefully at the archaeological record, we find warfare throughout prehistory. A more accurate view is that while colonial impact often radically changed its nature and causes, war has always been common over most of the world.

Many Southwestern archaeologists have revised their thinking about Southwestern warfare, especially quite recently. A number have encountered such overwhelming evidence for warfare in their fieldwork that they have been forced to accept its significance and look more carefully for corroborating evidence. They have begun building the presence of warfare into their explanatory models. This can be seen in work by Jonathan Haas and Winifred Creamer in the Kayenta area of northern Arizona; by virtually all the archaeological teams working during the last decade in the Tonto Basin; by William Doelle and Henry Wallace in the San Pedro Valley and northern Tucson Basin; by Bruce Bradley, Ricky Lightfoot, Kristen Kuckelman, and the Crow Canyon research team in the Four Corners area; and by myself and my colleagues in the El Morro area of west-central New Mexico, to name a few.

I recount my own experience in El Morro Valley as illustrative of this change in perception. The initial premise of the research effort known as the Cibola Archaeological Project was that there may have been some inter-societal conflict in the area. Nevertheless, the research team's questions and explanations for what happened in the valley were couched in such terms as climate change and increased social integration. Only after finding a large village that had been attacked and burned, and realizing that all the large pueblos in the valley were built rapidly and very defensively in the late 1200s, did I stop to rethink our suppositions. I now see that the El Morro Valley pueblos were caught up in an intense outbreak of warfare that swept through the Southwest. It is impossible to understand what happened in the El Morro Valley without accepting and understanding the importance of this pan-regional warfare. As a result, I changed my assessment of war as a tangential factor to being central to interpreting these sites.

If, then, a more realistic assessment suggests that warfare might have been more common in the past than originally realized, just what do we know? Because there has been a tendency to ignore warfare, information about it is not easily assembled. Moreover, recent interest in the topic is generating new information faster than it can be assimilated, so what is said here must be considered tentative.

Early Period Warfare

Overall, there is evidence of warfare from almost all time periods in the Southwest. The period from around A.D. 1 to around A.D. 900 in particular has much more evidence than one might expect. During this time, communities were small and the population was low, so we would anticipate less reason for conflict. Nevertheless, we find evidence of warfare in the form of massacres, fortifications, weapons, and rock art wherever we look.

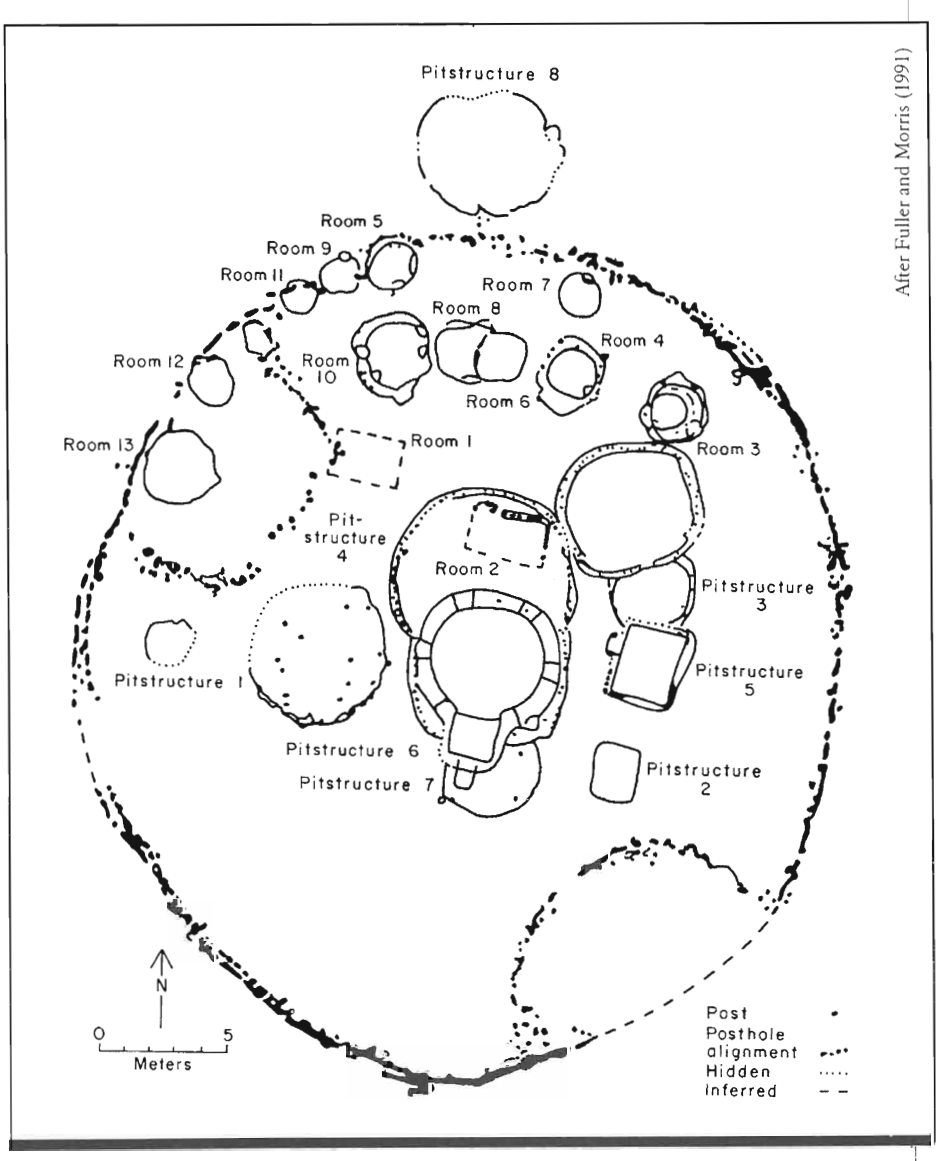
A particularly gruesome example is an Early period massacre is Cave 7 in southeastern Utah, where around 100 people were killed in Basketmaker II times (before pottery was made in that area—before A.D. 500). Some individuals were found with bone daggers and stone points still embedded in their chests. Another massacre is documented at Battle Cave in Canyon del Muerto (Canyon de Chelly), where the remains of thirteen individuals were found stuffed in an abandoned storage cist. Fractured skulls and a mummified body with an atlatl dart foreshaft embedded in the chest cavity pointed the excavator to violence rather than peaceful burial as the explanation.

There are Basketmaker rock art depictions of men holding trophy skins, there was a special form of basket used only to dry and stretch scalps, and fending sticks are commonly recovered along with atlatls. This last item may need clarification. During the earliest times in the Southwest, the bow and arrow were not present, and the atlatl was used to throw small spears or darts. With these atlatls, curved sticks with a thong that was wrapped around the user's wrist are often found. The best explanation for these sticks is that they were used to fend off darts thrown by atlatls. That is, they served as a kind of shield—thus, their sole function would have been warfare. If frequency and standardization of fending sticks are any measure, warfare using atlatls was also quite common.

At the other end of the Southwest, we find fortified hilltops, sometimes referred to as trincheras. Although their function has been debated, the most parsimonious explanation is defense. At least some of these date to the last millennium B.C.

In the Mogollon area of southwest New Mexico, early villages were almost invariably situated on hilltops for defense. In the Anasazi area, in places where no hills were available to build on, palisades, often made of hundreds of posts set vertically into the ground, enclosed many of the early small villages.

With the current evidence it is hard to determine whether warfare was chronic during the Early period or whether it waxed and waned. However, in the A.D. 800s we find an exceptionally large number of villages in the north-



Site plan of Knobby Knee, a Basketmaker farmstead in southwestern Colorado. The palisade was composed of over 500 substantial posts. Most of the pit and surface structures contemporary with the stockade were burned, possibly together with a portion of the stockade.

Cannibalism in the American Southwest?

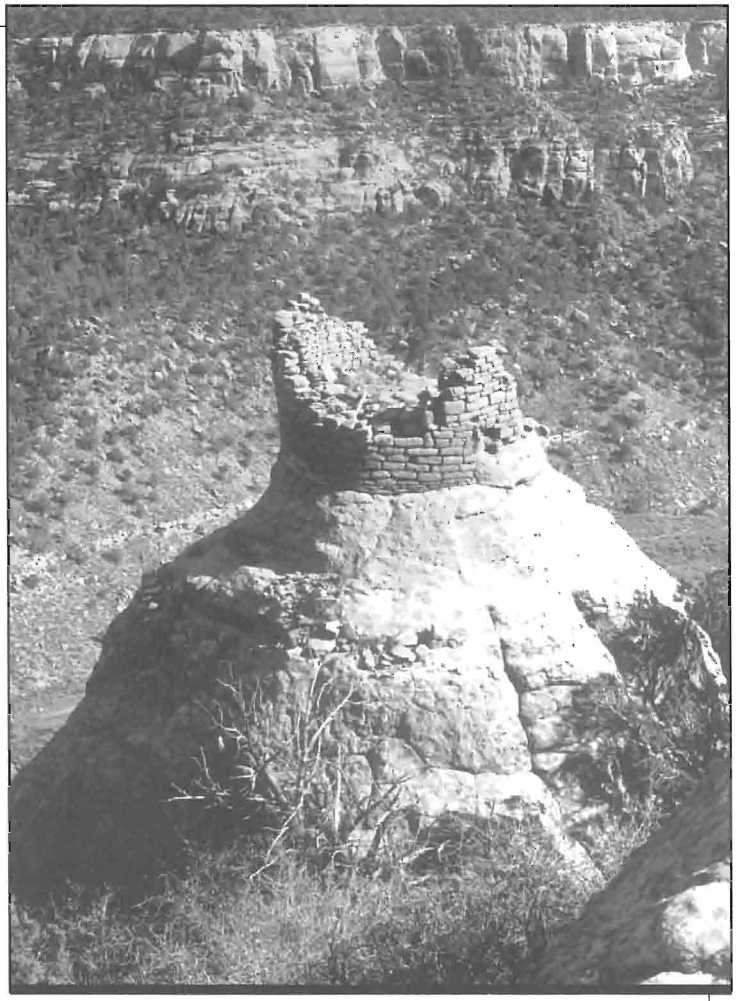
Penny Dufoe Minturn, Bioarch,
and Henry D. Wallace, Desert Archaeology, Inc.

It is one of the most thought-provoking and controversial archaeological books of the decade: *Man Corn: Cannibalism and Violence in the Prehistoric American Southwest*, by Christy and Jacqueline Turner (University of Utah Press 1999). Given the subject matter, how it is perceived may well relate to the emotional bent of the reader. However, even the harshest critics will discover well-reasoned investigations and exhaustively documented data that are difficult to dismiss.

The identification of cannibalism in the prehistoric record is approached on various levels in the study. The Turners consider evidence of the practice in Mexico, where it is documented in historic times; they develop a rigorous set of criteria to distinguish the practice of human butchering and cannibalism from cases of prehistoric interpersonal violence; and they consider the archaeological contexts in which the identified deposits occur. A total of thirty-eight sites with 286 individuals exhibits the suite of characteristics they deem necessary for a diagnosis of cannibalism. Unlike cases of non-cannibalistic violence which are widely dispersed in time and space, with only one or two possible exceptions, the documented cases of cannibalism are confined to the Chacoan portion of the Anasazi region coincident with the heyday of Chaco town construction and use in the A.D. 900 to 1200 timespan.

To account for this gruesome chapter in prehistory, the Turners develop a scenario placing the origins of the behavior in central Mexico, where they suggest it arose as a political control tactic utilized by the inhabitants of Teotihuacán and later by the Toltecs. With the collapse of the Toltecs, the practice is seen to disseminate northward. Ultimately, the Turners suggest, actual Mesoamerican immigrants and their descendants settled in Chaco Canyon, using rituals and human butchery to terrorize local populations and develop the social hierarchy witnessed in the region's architecture. In support of their arguments, they offer evidence of Chaco/Mesoamerican contact in the form of interments with dental transfigurement—tooth modification—that are almost certainly Mesoamerican immigrants, in addition to the host of architectural, iconographic, and artifactual correlations.

The idea that cannibalistic behavior was widespread during the Chacoan era has not been openly embraced by archaeologists (see the May/June 1999 issue of *Archaeology* magazine and the November 1998 issue of *The New Yorker*), and it has sparked dismay and antipathy from contemporary Pueblo Indian people. Whether or not one accepts the idea that humans were consuming humans, one is left with indisputable evidence of prehistoric violence on a scale that many will find hard to reconcile with traditional perspectives on Southwestern prehistory. It is certain that the issues raised will be hotly debated for some time to come.

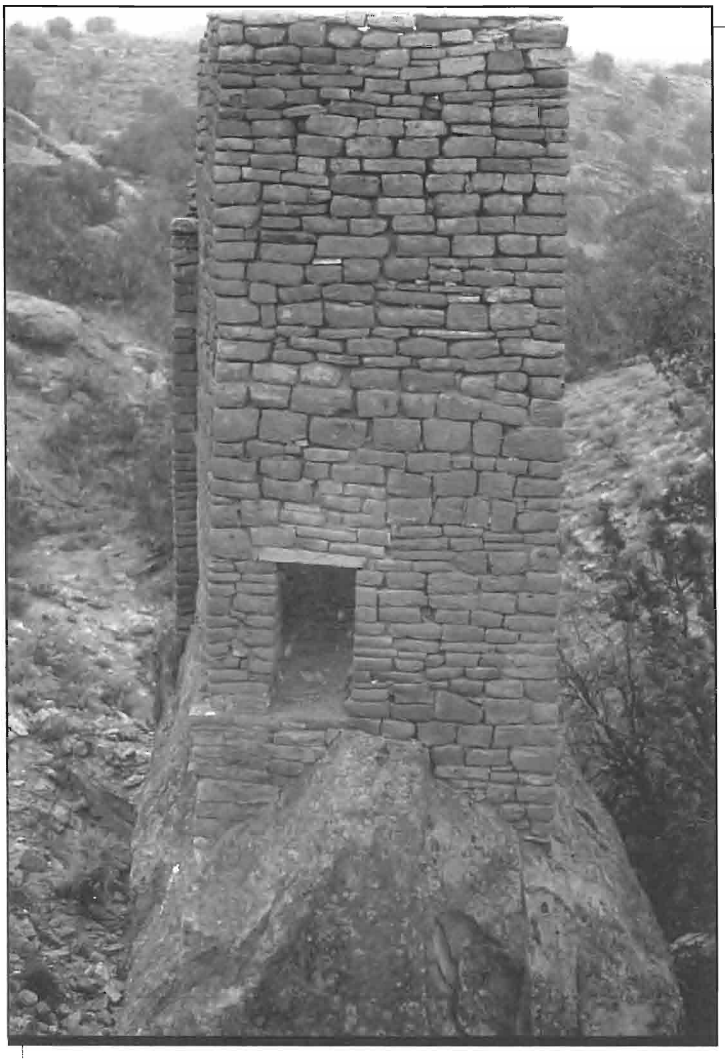


Tower in Navajo Canyon, Mesa Verde National Park. The location on an isolated mesa remnant renders it impractical for reasons other than defense. Photo courtesy of Mesa Verde National Park (negative number 2457).

ern Southwest that were burned, almost certainly the result of warfare. In a number of instances, unburned, unburied bodies—presumably individuals killed in attacks—are found. For example, at the palisaded Bancos Village site, four disarticulated individuals were found in two different pithouses at the burned settlement. At Duckfoot, there were seven; at Sambrito, fifteen.

Middle Period Peace?

What follows next in the Southwest sequence is quite unexpected: for over 200 years there is almost no evidence of warfare anywhere in the Southwest. From around A.D. 900 to well into the 1100s, burned sites are uncommon, there are no depictions of fighting or trophy heads (other than rare Mimbres bowl depictions that can be interpreted in various ways), and very few sites on hilltops. This period includes the Chaco Interaction Sphere in the eastern Anasazi area, the peak of the Sedentary period among the Hohokam, and the Classic Mimbres in the Mogollon area. Populations everywhere grew to levels never before attained; the great Chaco towns were built and the



Tower at Holly Group, Hovenweep National Monument. One of a group of defensively-sited towers located on boulders and mesa tops in southwest Colorado. Photo by Jack Smith, courtesy of Mesa Verde National Park (negative number 01025).

Hohokam irrigation systems were expanded to extraordinary lengths. We would expect increasing scales of conflict to occur as population levels placed stresses on the food supply and other resources, but this does not seem to have happened. What evidence we have for warfare is minimal; however, not all archaeologists would agree with this opinion, and it is currently a subject of debate. David Wilcox of the Museum of Northern Arizona views the Chaco system as being highly competitive and likely involved in ongoing warfare. Increasingly refined settlement data will help resolve these diverse perspectives.

Even though the evidence for warfare is weak in the Middle period, evidence for violence is unequivocal. Perspectives vary on the origins and context of the violence observed, which includes abuse of people (especially women) prior to death and large-scale acts of cannibalism. Christy and Jacqueline Turner provide abundant and meticulously chronicled evidence that the Chacoan region was the focus of widespread and relatively common cases of butchering humans that are probably some form of cannibalism (see sidebar, page 4). While there is no doubt that some portion of the Chaco population was being treated very badly, such treatment seems to have taken place within the overall Chaco polity and, at this point, does not seem to be the result of war and conflict between polities.

Intense Warfare in the Later Period

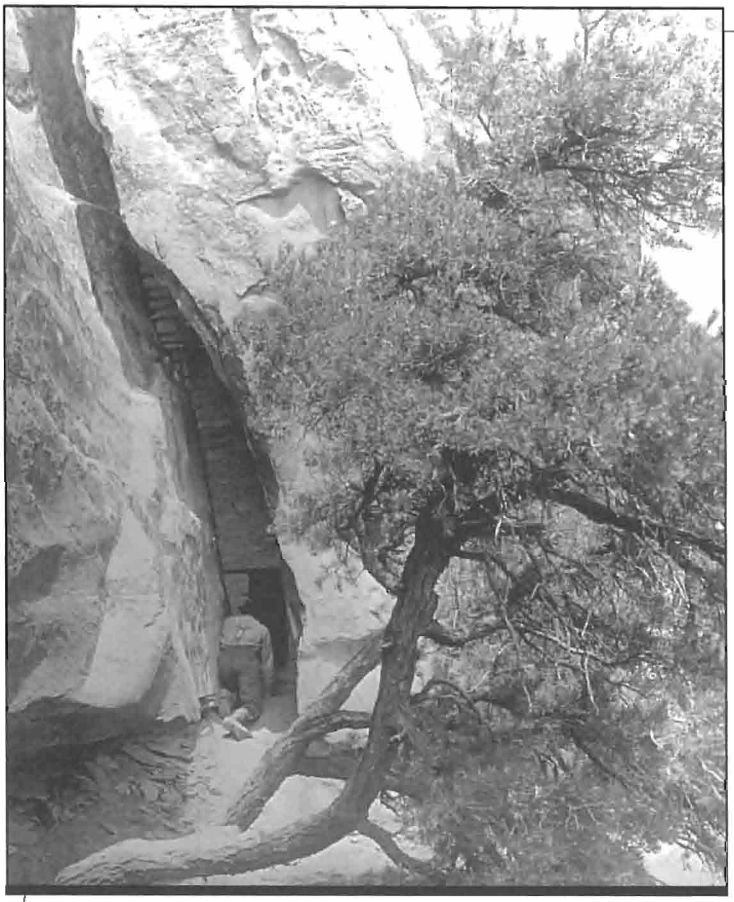
We start seeing ever-increasing evidence for warfare beginning near A.D. 1200, and it seems that by the 1300s the entire Southwest was engulfed in conflict. This is the time for which we have the best information and from which we can draw the most inferences.

We find evidence for massacres throughout the region, from sites like Sand Canyon and Castle Rock in the Mesa Verde area, to Casas Grandes in northern Chihuahua. A great number of sites were massively burned, and there is evidence of scalping and other forms of traumatic death. But the most important and widespread evidence for warfare at this time comes from the configuration and location of the sites themselves.

A sequence of escalating defensive responses by populations faced with ever-increasing threats began in the 1200s. At first, this was a minor trend. More villages were on hilltops, but not all; more communities tended to be room groups spaced near each other for mutual defense, but the buildings themselves were not defensive; some sites had walls around them or towers incorporated into them, but most did not. People seemed to adjust to the threat of attack, but did not adjust very much. The implication is that there was the perception of potential danger in the early 1200s, but not an overwhelming fear.

Soon, however, conflict intensified. Communities that consisted of dispersed room groups were often burned and abandoned. Massive fortress-like towns were built over much of the Southwest at this time (the Hohokam heartland being a notable exception). Many of these fortress-like sites are on hilltops, and some have walls and moats to further protect them. Many of these large communities had two-story exterior walls and housed hundreds of individuals. Smaller settlements were abandoned in favor of consolidating into larger and more powerful towns. Caves were also used to house large communities. The famous cliff dwellings in the Mesa Verde and Kayenta areas, as well as those in the Tonto Basin, Sierra Ancha, and Upper Gila, were all built at this time in caves or cliff overhangs that had been unused for a millennium.

The cliff dwellings offer an interesting example of changing archaeological perceptions. It has often been argued that they were not built for defense, but were designed for protection from the elements, to conserve farm land, and other similar peaceful purposes. None of these



Entry to Balcony House cliff dwelling, Mesa Verde National Park. One must crawl and then climb to gain entry, greatly increasing the defensive capability of the site. Photo by H. Poley, courtesy of the Denver Public Library Western History Department (negative number P-634).

alternatives hold up to scrutiny. Not only were the cliff dwellings used only during the periods when other sites were being built as forts, but at the same time, special watchtowers were built nearby. Moreover, cliff dwellings such as Balcony House at Mesa Verde were constructed with the idea of restricting access by token of their relatively inaccessible locations. Balcony House (see photo on page 1) is a particularly dramatic example: it was later remodeled to make access even more difficult, so one had to crawl on hands and knees to get in.

Unburied bodies, decapitated heads, and isolated limbs have been found in a number of the cliff dwellings, such as the four or more unburied individuals in Long House and the three skulls in the vents of kivas at Spruce Tree House. Many of the unburied bodies were left at the time of abandonment. The combination of evidence, including defensible locations, construction of defensive architecture, and direct evidence of violent conflict, indicates that the cliff dwellings are best viewed as another type of fortress, especially suited to groups that were too small to build a fortified settlement on open ground.

The most important evidence for the scale and extent of warfare in the late prehistoric period comes from how sites were spaced over the landscape. From what had been a much more even distribution of settlement in optimal settings across the region, there developed an increasingly clustered distribution, with large empty zones between the site clusters. The empty zones, or "no-man's lands," were usually twenty or more miles in width. Elsewhere in the world such gaps in settlement coincide with warfare. Why give up the efficient use of so much territory, unless it is too dangerous to live there? Within the clusters of sites, which included from two to eighteen separate communities, settlements were often located so that they could visually communicate with each other. Haas and Creamer found this pattern in the Kayenta area, we found it in the El Morro Valley, and David Wilcox and his colleagues have documented it for a vast area north of Phoenix. The communities are clustered for mutual defense, using line-of-sight communication, presumably to solicit aid when attacked. The results are wide empty zones between the competing polities.

By around A.D. 1300 almost the entire Southwest was broken up into these tightly clustered polities surrounded by no-man's lands. This pattern is best known for the northern Southwest, where site data are the best, but it is rapidly being documented for areas to the south. For example, a large empty zone exists between the communities of Phoenix and Tucson. Even more interesting is what happened next: the site clusters began disappearing. On the Colorado Plateau and in the White Mountains there were about twenty-seven such clusters around A.D. 1300. Over the next century, the number of these clusters declined until only three were left (the historic-period clusters of Hopi, Zuni, and Acoma). The remaining twenty-four clusters were gone. To the south, the same type of attrition took place, but it is harder to quantify.

What happened to the disappearing settlement clusters? Even though only limited excavations have been undertaken on the sites within them, for those clusters with even limited evidence, fully two-thirds have at least one site that was massively burned and then abandoned. Many sites have unburied bodies associated with them. There is also evidence that the survivors migrated to other clusters. And, in some cases, the immigrants were again attacked and their community destroyed, such as the well-documented conflagration in the immigrant room block at Point-of-Pines. This was not a good time in the Southwest.

The most recent population estimates for the Southwest, developed by Jeffrey Dean, William Doelle, and Janet Orcutt, indicate that from the peak population of the 1100s, the population declined to one-quarter or less by A.D. 1400. Warfare and its consequences are partly to blame, but what could have caused such a pan-regional disaster? While the explanation is far from worked out, I believe the

current evidence points to climate change as a critical component. The A.D. 900-1100s, the "Middle period" time of peace, is known the world over as the Medieval Warm period when the climate was particularly favorable for farming. Greenland was colonized, and the Gothic cathedrals were built in Europe. In North America, the Chaco system flourished, and the great town of Cahokia, with the fourth-largest pyramid in the Americas, was built near St. Louis. Population soared everywhere. Then the climate began to deteriorate at a rapid pace, and by the 1300s the Little Ice Age had arrived. Suddenly, much of the Southwest was unusable by farmers and there were far too many people to support with available resources. Fierce competition ensued and warfare broke out. The population declined, probably due to starvation, death due to warfare, and poor nutrition resulting from the stress of warfare and the aggregation of populations into large communities.

As if this was not enough, at just around this time a new weapon, the sinew-backed recurved bow, was introduced into the Southwest. Much more powerful than the previous self or straight bow, this new weapon did not cause the increase in warfare, but it may have made it more deadly.

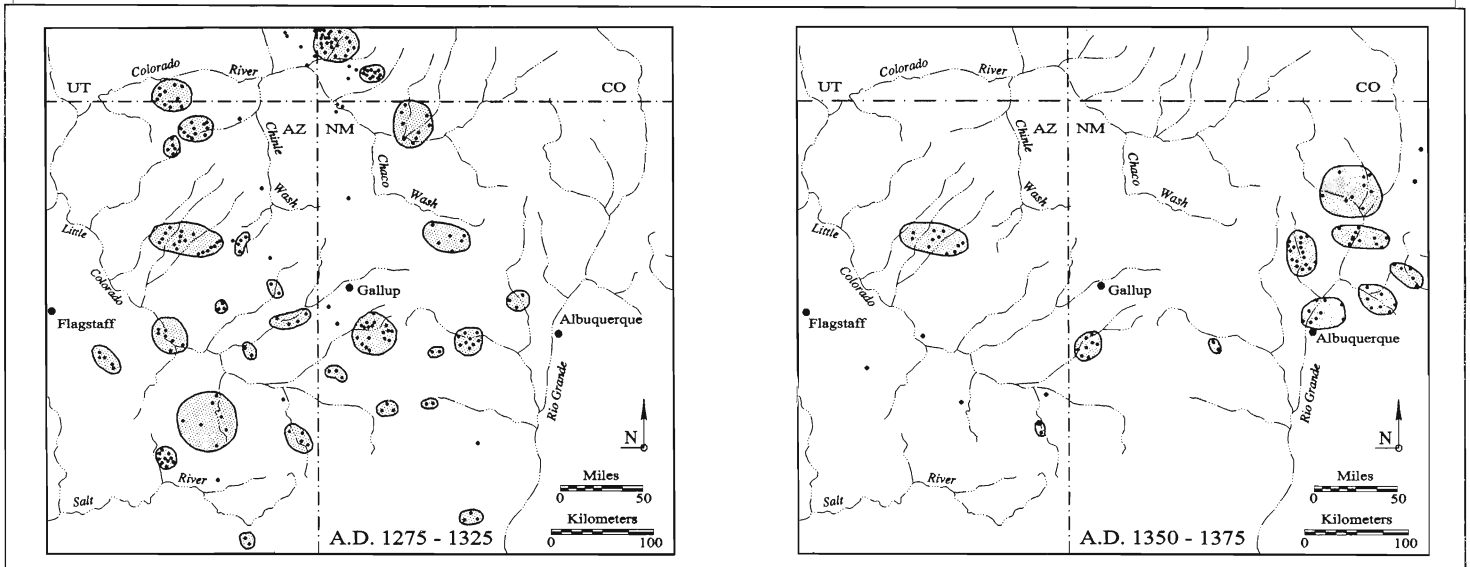
The population decline and process of abandonment in large areas of the Southwest seem to have stabilized by the 1500s. We might have expected the population to rebound and areas to be reoccupied, but the intrusion of the Spaniards and Athapaskans eliminated that possibility. In the northern Southwest, virtually all the farmers were living in compact defensive communities that came to be called pueblos. Thus, the very nature of these communities was initially dictated by defense. In the southern desert areas, walled enclosures were built, such as at Los Muertos, Casa Grande, and the walled villages of the lower San Pedro Valley, but much of the population never packed into large fort-like buildings. These communities were ultimately abandoned and regional abandonments and settlement reorganizations ensued prior to the arrival of the Spaniards. Warfare seems to have been equally intense in this area, but forts were not ubiquitous and defense must have sometimes been from large numbers of defenders. In spite of the difference in defensive arrangements, the population declined here as well.

Conclusion

From the perspectives offered here, it turns out that the Southwest encountered by the early Spanish explorers had recently undergone a dramatic and traumatic upheaval. The previous few centuries had been a period of crisis, and the resulting cultural transformation occurred and evolved as a means of coping with the difficulties encountered. People had to cooperate in order to survive, which resulted in the strong social institutions seen today among the farming peoples of the Southwest.

While we may not enjoy looking at Cliff Palace with the realization that a more accurate name might be "Cliff Fortress," a more realistic and accurate assessment of the role of conflict in the Southwest can only enhance our understanding of the overall history of the region. Such knowledge also allows the history of the Southwest to contribute to an overall history of the past. We are in the process of documenting one of the best-understood cases of population growth and decline and how it relates to climate change, warfare, and the adaptive response of the participants. Such changes are probably the nature of the human condition; we are the better for understanding them.

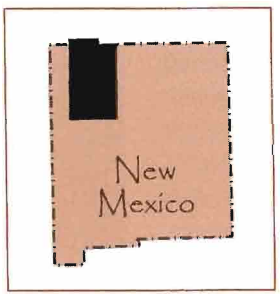
Population responses to escalating warfare: sites and site clusters in the Colorado Plateau and White Mountain areas. Left, tightly clustered polities, A.D. 1275 to 1325; right, disastrous decline and reorganization, A.D. 1350 to 1375.



Eighteenth-Century Navajo Defensive Sites in the Dinétah

Ronald H. Towner, Laboratory of Tree-Ring Research, University of Arizona

IN THE NORTHWEST corner of New Mexico around the Largo, Gobernador, and La Jara drainages is Dinétah, the ancestral homeland of the Navajo people. The region is host to a distinctive group of sites, known as pueblitos, that offer intriguing insights into one native population's responses to historic-period conflict. Data from historical sources, archaeology, dendrochronology, and Navajo oral traditions all suggest that the Navajo used these sites as defensive fortresses during the eighteenth century.



Pueblitos are a diverse class of sites distinguished by their occurrence in defensible settings. Recent surveys have identified more than 125 such sites in the Dinétah. Most include masonry buildings, but some consist of only simple forked-pole hogans (the traditional Navajo architectural style). The sites are generally small, but can range up to 40 rooms. They are found on isolated boulders, mesa rims, in rockshelters, and in other defensible positions. Some occur in site complexes that include nearby nondefensible groups of hogans.

Recent survey information and the data generated by a detailed program of tree-ring dating indicate that most pueblitos were constructed in two waves, the first in the 1710s, and the second between 1725 and 1755. Differences between them in terms of architecture and site setting can be correlated with changing styles of conflict documented in the historic record.

The pueblitos constructed between about 1710 and 1720 may have been built to counter the threat posed by large Spanish entradas, such as that conducted by Roque Madrid in 1705, whose mission was to "punish" the Navajos and recover "captives." They can be classified into three groups: large multi-room structures, relatively inaccessible forked-pole hogan complexes, and hidden rockshelters. Clear lines-of-sight are present between all the large multi-room structures built at this time, and all are relatively high above valley floors. Intervisibility may have permitted rapid communication and group action, and the larger the interconnected population, the larger the group available to repel an attack. Forked-pole hogan sites of this time period are also located on high prominences above steep cliff faces in virtually inaccessible areas. Taken together, these sites represent a population concentration in settings that were difficult for the Spaniards to attack, especially on horseback. The rockshelter sites are smaller, and may represent a different defensive strategy. By staying hidden in small sites, the Navajos using the rockshelters may have hoped to avoid detection by the Spaniards.

The political situation in New Mexico changed in the 1700s. The Pueblo Revolt of 1680 had precipitated a dramatic expansion of the availability of horses to groups outside New Mexico, and in the early 1700s, the French began trading guns up the Arkansas River into the Colorado mountains. The Ute, a nomadic group that previously lived farther west, used this increased mobility and firepower to threaten both Navajo farmsteads in the Dinétah and Spanish settlements in the Rio Grande. In 1716, the Spaniards signed an informal peace treaty with the Navajo, mainly to use them as a buffer against the increasingly powerful Ute. The Navajo, who were mostly hunter-gatherer-agriculturalists, had neither the mobility nor the firepower to confront the Ute directly. What they did have, however, was a defensive strategy to minimize the Ute advantages.

The primary goal of Ute raids on Navajo settlements was probably the procurement of slaves . . .

The primary goal of Ute raids on Navajo settlements was probably the procurement of slaves, particularly children and women, who could be sold for large sums in the Rio Grande Valley. Most of these captives ended up as household servants in the Spanish settlements, or as labor-

Truby's Tower, a small boulder-top pueblito. Photo courtesy of Ronald Towner.

ers in the mines of Mexico. Slave raiding was a very different type of conflict than that conducted by the Spaniards. The Ute strategy appears to have been one of small raiding parties conducting surprise attacks, and seizing captives before an adequate defense could be organized. Speed, surprise, and minimal contact with Navajo warriors were probably the most important aspects of these tactics.

Navajos apparently countered this strategy by building small pueblitos on boulder tops and mesa rims—locations where the Utes could not ride their horses. Indeed, the majority of pueblito sites built between 1725 and 1755 are small structures built on boulders amidst several forked-pole hogans, or hogan and masonry sites at the very edge of precipitous mesa rims. The masonry structures were probably refuges used only when danger loomed. Their locations would have forced the Utes to dismount and fight, something that was counter to their quick-strike strategy.

While the archaeological and historical data contribute to a general interpretation of the pueblito phenomenon, it is the combination of pueblito construction dates and tree-ring-reconstructed precipitation data that led to one of the most interesting discoveries: most of the sites were built during periods of above-average precipitation. Why would this be the case? One commonly thinks of raiding and warfare as being most likely in times of drought and famine, when necessity forces conflict. Historic data point to a different scenario: among the Ute, raiding was most commonly conducted in years when subsistence stress was minimal. In short, raiding was an optional activity, only conducted after that seasons' essential duties were complete.

The last pueblito was built in the spring or summer of 1754, and the entire Dinétah was probably abandoned by 1762 or shortly thereafter. If pueblitos had been successful in countering both the Spaniards' efforts at "punishing" the Navajos, and the Utes' slave-raiding endeavors, why were they abandoned? In the past, some archaeologists and historians have suggested drought as a cause, but tree-ring evidence shows that is no longer a viable explanation. Others have suggested that the increasing Navajo reliance on sheep, and the subsequent desire for better pastures, were factors. Such explanations may be partially valid, but more adequately explain why some Navajos moved south into the San Juan Basin, not why they abandoned the Dinétah.

Current research is again examining the changing nature of the threat against the Navajo. One suggestion is that, in the late 1740s and early 1750s, the nature of conflict in New Mexico changed from the "for-profit" enterprise of slave raiding, to one of revenge, killing, and "total warfare." In such a climate of mayhem, small pueblitos may simply not have provided enough protection for anyone, young or old, male or female. Thus, the best option was to migrate farther away from the enemy.

Hunters of Animals, Hunters of Men

R. Jane Sliva, Desert Archaeology, Inc.

As dusk descended on the village, a man crossed an open space alone. He paused near the ruin of a pithouse that had been abandoned when his grandfather was a boy. As his head turned toward the sounds of furtive footsteps in the brush, five arrows tore through the gloom, striking him in the back. He fell without a sound. Five figures emerged from the shadows to drag the dead man into the abandoned pithouse and then disappeared back into the night. The man would remain there in the entryway, the arrows still in his back and a broken grinding stone heaved onto his chest, for the next thousand years. . .

This scenario is one of several which may have played out at Tres Huerfanos, as suggested by Desert Archaeology's discovery of a skeleton with several arrow points embedded in its ribcage. Was the man executed for some unforgivable social transgression? An intruder from another village or ethnic group? Or the victim of random foul play? All we know for certain is that violence has been endemic to humanity for a very long time.

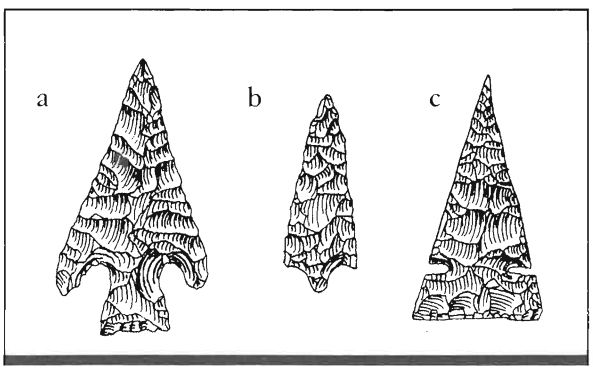
THE WEAPONS of warfare in the prehistoric Southwest can be lumped into two groups: those used in hand-to-hand or close-quarters combat, and those used to attack from a distance. Close-quarters combatants could utilize a wide range of weapons, including wooden clubs, stone mauls, and bone or stone daggers. To attack from afar, however, fighters needed to be able to launch weapons that would travel a long distance and hit their targets with both accuracy and lethal force. To that end, prehistoric groups used atlatls (illustrated on opposite page) and, beginning sometime within 500 years of the turn of the millennium, bows and arrows.

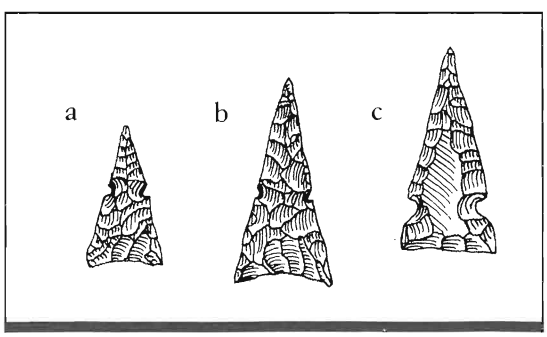
The functions performed by many types of flaked stone tools are often difficult to discern. However, projectile points are fairly unequivocal. While some points were used as hafted knives, the overriding purpose behind these artifacts was to kill—in the hunt, in battle, or, less romantically, in individual homicides. Can we say anything substantive about the differences between hunting points and weaponry points? Possibly.

Of course, projectile points designed for hunting large game were perfectly effective against humans as well. An example of this comes from the early Cienega phase (800-400 B.C.) Wetlands site, where a man was buried with three points lodged in his ribcage and one in his pelvis. All four points are of the Cienega Long style and are not appreciably different from the other Cienega points recovered from the site, at least some of which presumably were intended to be used for hunting.

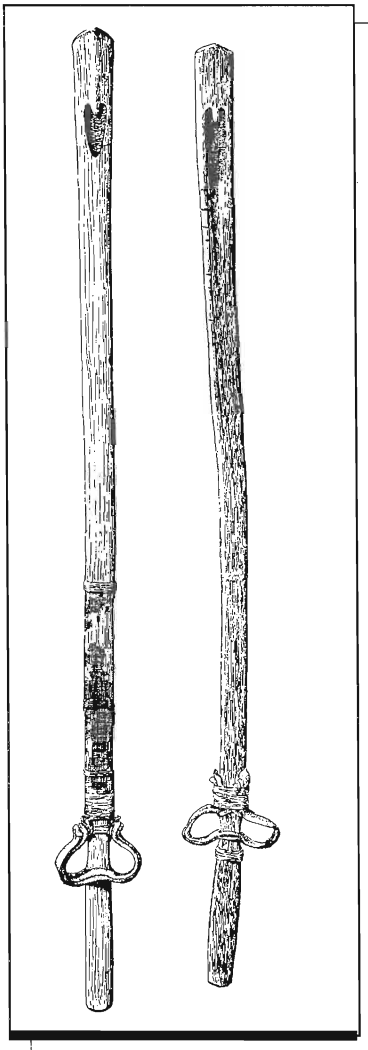
Later projectile point assemblages suggest that some Salado and Hohokam arrow points may have been designed with an eye toward the differences between hunting animals and hunting men. The average man might have weighed roughly 130 pounds, substantially less than the large game that may have been hunted. Arrows would not have to be as rigidly constructed to bring down a man as to bring down a deer, for example, since people lack fur and thick hides, and standing erect leaves vital areas more open to attack. Having

Left: Projectile points recovered from within bodies buried in central and southern Arizona: a) Cienega Long point recovered from ribcage, early Cienega phase, Wetlands; b) Colonial Stemmed point from neck, Santa Cruz phase, Cerro Flojo; c) Sedentary Narrow-notched point from ribcage, Sacaton phase, Tres Huerfanos site. Right: Changes in Hohokam and Salado arrow point morphology in the Classic period: a) early Classic Side-notched point; b) middle Classic Side-notched point; c) late Classic Side-notched point.





Jane Sliva

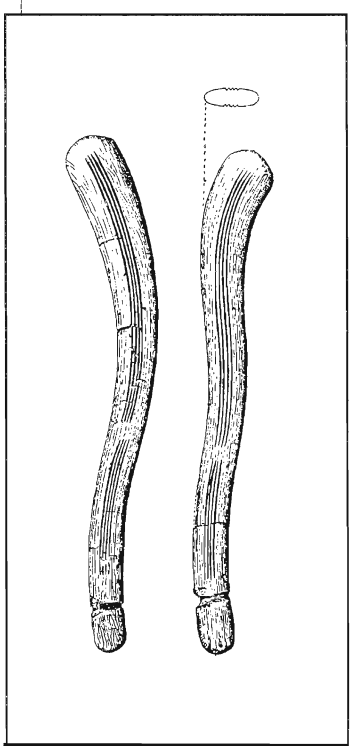


Left: Atlatls (White Dog Cave). The end of the dart mainshaft opposite the hafted end was drilled with a small socket so that the dart could be seated on the spur at the end of the atlatl (at the top in this figure). The person throwing the dart grasped the atlatl's handle with the thumb and last two fingers. The index and middle fingers extended through the finger loops (at the bottom in this figure) to steady the dart. Darts were thrown in an overhand motion, with the atlatl effectively lengthening the thrower's arm and propelling the dart with far greater force than could be attained when throwing a dart with the unaided hand. The atlatls illustrated here are slightly more than two feet in length.

an arrow that will remain intact might be more of a consideration in hunting animals, where it is advantageous for the shaft to stay attached to the quarry to slow its escape. This also gives the hunter the opportunity to retrieve and reuse his weapon. In warfare, the main concern is to disable or dispatch the enemy from a distance; arrow retrieval is potentially dangerous and less a concern. There would also be a need to make the weapons as lethal as possible, even more so than in a hunting situation—a wounded deer or sheep will likely try only to escape, while a wounded man may still have the capacity to fight back with lethal force.

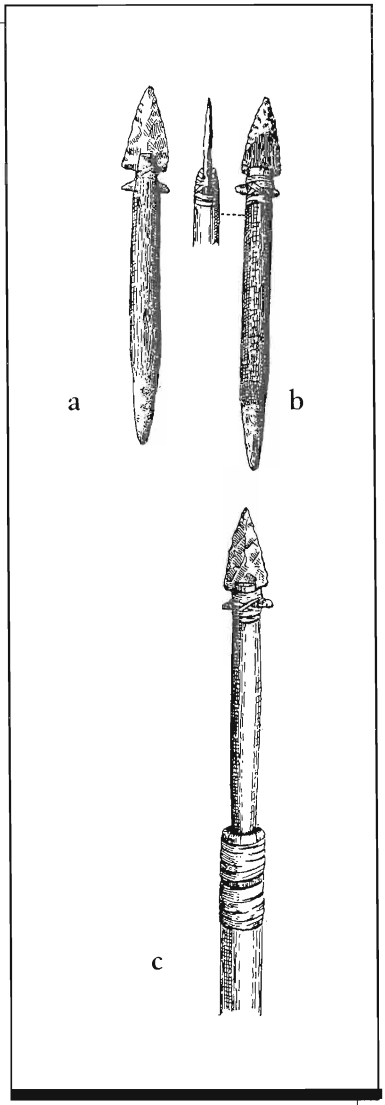
Arrow points recovered from burials excavated by Desert Archaeology in the Tonto Basin may provide some insight into the design of weapons deemed by their makers to be suited for the dispatching of human quarry. The points found within the ribcages of two pre-Classic period (A.D. 750-1150) individuals had long, narrow blades and short stems. This design results in a less rigid haft, but a great amount of exposed blade and longer cutting edges capable of inflicting a great deal of damage on the target, particularly if the blade should break off within the victim's body.

Interestingly, the Classic period (A.D. 1150-1450) in the Salado and Hohokam regions of central and southern Arizona is marked by the progressive lowering of notches on the sides of arrow points, resulting in analogous long, narrow blades and short stems. This same time period has been argued to have been marked by increasing levels of regional conflict. This may be purely coincidental. But it is also possible that an increasing need for efficient weapon design as the Classic period wore on led to the redesign of the side-notched style away from the rigid hafts of the early Classic to the long, exposed blades of the late Classic.



Left: Fending sticks (White Dog Cave). These curved implements are inferred to have served as fending sticks used to deflect darts during combat. While atlatls greatly increased the velocity at which thrown darts or spears could travel, they were still slow enough to have been avoided or knocked aside with the aid of these curved clubs. The specimens illustrated here are slightly less than two feet in length.

Note: All drawings on this page from Guernsey and Kidder (1921).



Above: a-b) Side-notched projectile points hafted in dart foreshafts (White Dog Cave, Arizona). The points were inserted into a deep groove at the end of the shaft, cemented with mastic, and bound with sinew cordage. The opposite end of the foreshaft was pointed so that it could be set into a socket at the end of the dart's mainshaft. The foreshafts illustrated here are roughly six inches in length. Complete darts, including mainshaft, foreshaft, and projectile point, were four to six feet in length; c) Foreshaft set into mainshaft (White Dog Cave). The end of the mainshaft that was drilled to accept the foreshaft was strengthened with sinew wrappings.

BACK SIGHT

A "back sight" is the reading surveyors use to check their work. The survey instrument must remain stable so that each shot contributes to an accurate map. By regularly "reviewing" the terrain, the surveyor's task progresses. For *Archaeology Southwest*'s purposes, "Back Sight" will regularly reflect on and evaluate the Center's mission.

My calendar is increasingly filled with the Center's "big events." Some examples of last week's entries:

Monday—address budget issues on Center grant proposal to National Science Foundation; Thursday—review stratigraphic details of Tucson's Presidio wall; Saturday—to San Pedro Valley for test excavations at Flieger platform mound site; Sunday—write draft of new "Back Sight" column for *Archaeology Southwest.*

At times it's hectic, but never dull. Today, after writing a first draft of this column, I needed a break. A short hike was the answer, so I made the twenty-minute drive to Catalina State Park just north of Tucson.

The unmarked trail I chose skirts the Romero Ruin, one of the Center's early projects. I found the rebar stake marking where Geo-Map's survey instrument was set up, and I recalled how the abundant mesquite trees on the site made mapping so difficult twelve years ago. Today, only the interpretive sign on the large trash mound rose above the trees to remind me of the thousands of visitors who come to glimpse the subtle traces of a Hohokam village.

I didn't linger very long at the mapping station, pushing on toward the Catalina Mountains. I paused once as a gila monster lumbered ever so slowly across my path. As I started seeing occasional sherds, I detoured from the trail to see water racing down bare rock into a plunge pool. We've had only a single rainstorm over the past five months, and still it flows today! This would have been the fail-safe water source for the Hohokam residents of Romero Ruin. Finally, seated atop a large boulder, enjoying the balanced effects of a cool desert breeze and a warm setting sun, I rewrote this column in my field notebook.

The peaceful, pristine setting quickly brought into focus how closely the Romero Ruin project and the unfolding of the Center's mission are linked. Our first field efforts prepared us to lead tours of the site during Archaeology Week of 1986. Early in 1987 we surveyed the park with the help of Center volunteers, and we mapped the Romero Ruin. In 1988 the twenty-six sites in the park were listed in the National Register of Historic Places as the Sutherland Wash District. We assumed our work was done, but in 1989 the Forest Service asked us to prepare a plan for interpreting the Romero Ruin. To implement that plan, we did testing and stabilization work in 1990 and 1993, and park staff built the interpretive trail. In 1996 Deb Swartz and I published a booklet on the Romero Ruin, and the following year Connie Allen-Bacon told the story of the historic settlers of the area.

My writing was halted briefly when a second gila monster climbed into the sun and surveyed its surroundings from a rock just below my perch. It made me wonder if there was some message in this phenomenon of multiple gila monsters. I began forming an analogy with the Center's slow, meandering progress over more than a decade on the Romero Ruin project. That kind of progress, like the slow deliberate pace of the gila monster, works just fine in a protected area like Catalina State Park. But most of the Center's current priorities are in areas of rapid growth and change. Every day, sites are threatened, and all too often they are damaged or lost.

My energy was restored. My reflective break in this protected preserve had served its purpose, renewing my desire to return to the hectic pace of the Center's current world.

The Center needs *your* help keeping up with today's fast-paced world. Many Center members are helping through their volunteer efforts. Moving to a higher membership category or providing a cash contribution are also extremely helpful. The Center is a 501(c)(3) charitable organization, so any donations are tax deductible.

In the longer term, think seriously about including the Center for Desert Archaeology in your estate planning. Our core endowment ensures our long-term existence, but we must continue to expand that fund. Such expansion is essential if we are to succeed in the much more ambitious programs we are now pursuing.

Please, carefully consider what you can do to help. My calendar still has some empty slots. . .

William H. Doelle, President
Center for Desert Archaeology

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Center for Desert Archaeology
Archaeology Southwest
3975 North Tucson Blvd.
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