the SAA archaeological record
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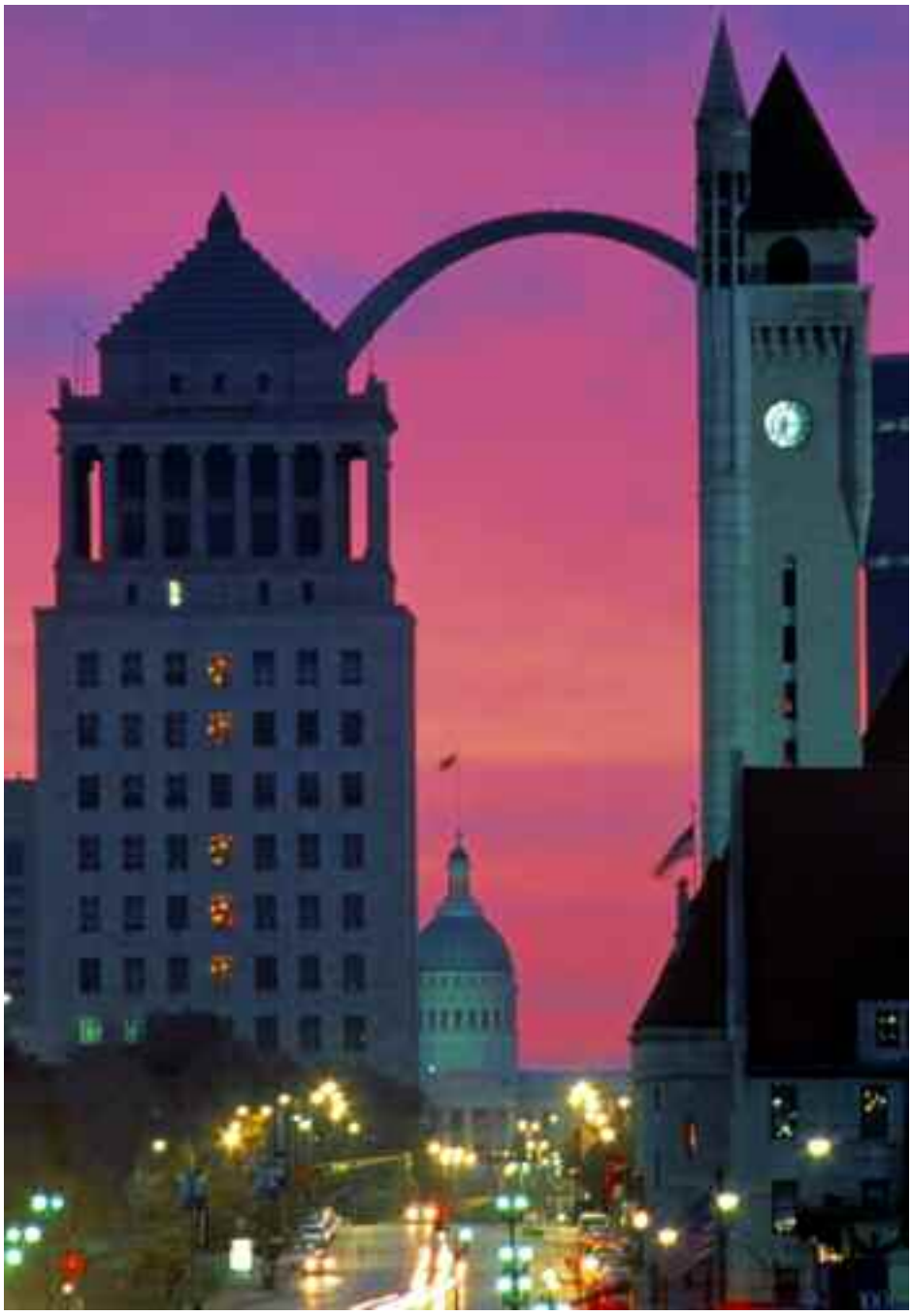

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The Magazine of the Society for American Archaeology

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On the cover: Recent excavations at the Bridge River housepit village (EeRl4), British Columbia (Housepits 25 and 26 in the foreground). Photograph by Anna M. Prentiss.

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EDITOR'S CORNER

Andrew Duff

Andrew Duff is an Associate Professor of anthropology at Washington State University.

This issue of *The SAA Archaeological Record* features a group of articles related to "Engendering the Archaic Period in the Desert West," which were solicited, compiled, and edited by Barbara Roth. These five pieces highlight insights we are capable of making when we ask questions about who did what in the past. I would like to thank Barb for developing this theme and working with authors to produce the group of papers that appears here.

Four additional articles relate directly or indirectly to the Anniversary Annual Meeting in St. Louis. David Browman's article revisits the founding of the SAA and an initial commentary that developed out of the 50th Annual Meeting. His piece brings attention to the role several women played in the Society's founding, and provides background information on their contributions to the field. John Whittaker's article discusses three novels that feature Cahokia in their storylines, describing both the works and how he uses these when teaching. Joe Watkins briefly updates the membership about a Task Force effort to identify and/or recruit at least 75 members of Native American ancestry for the 75th Anniversary Meeting. Goals are meant to be surpassed, so please help the effort by spreading the word if you know of people working or interested in the field who might become members. Frank McManamon and Keith Kintigh's article reports on Digital Antiquity, an organization working to create a centralized, online digital repository for archaeological data. This important effort concerns us all, regardless of where in the world we conduct research or what our employment context is, and promises to assist in letting us all make a lasting impact to the discipline by ensuring that our data is both accessible and can outlive us.

This issue closes with a recollection of the accomplishments of Dick Woodbury, authored by George Gumerman. When combined with the recent passing of Nathalie Woodbury (see the May 2009 issue of *The SAA Archaeological Record*, pp. 44), the field has experienced a true loss. I met Dick and Nathalie briefly as a relatively new graduate student, and had a few conversations with Dick related to the archaeology of the Zuni region. He was gracious, kind, and interested in my work in the Zuni region—an experience that definitely stuck with me. The fond sentiments for the Woodburys expressed by the authors of the "In Memoriam" pieces that have appeared here and in the AAA Newsletter (and perhaps elsewhere) attest to their positive impact on the field and many people.

As always, if you have written an article you would like to see in *The SAA Archaeological Record,* please send it in (duff@wsu.edu).

Can We Improve the Intellectual Content of the Annual Meeting?

I have long had a vague dissatisfaction with the intellectual content of our annual meetings. Yes, there are always lots of interesting papers and posters, and there are usually exciting exchanges of ideas in the bars (if we can recall them later). But it seems to me that the structure of the meetings and our professional culture conspire to limit the intellectual level of the event. Two experiences last spring—chairing our annual meeting, and attending the annual meeting of the Association of American Geographers—gave me a number of ideas that could help counter this trend. I present two suggestions, not as proposals, but rather as possibilities that members may want to think about while running between sessions in St. Louis this spring.

What is wrong with the annual meetings? Too many papers, particularly too many bad and boring papers. Not enough time for questions or discussion at symposia. Few interesting events outside of the regular rushed sessions. Here are a couple of ideas that could improve the situation.

(1) More flexible scheduling. The geographers work with time blocks, and within those blocks, session organizers have some flexibility in how the time is spent. Most slots for papers are 20 minutes, not 15 minutes. In some cases, periods for discussion are built in (I am NOT referring to formal remarks by a participant who is called a "discussant"). There seem to be a greater number of workshops and unscheduled panels than at the SAA meetings.

From my experiences as program chair last year, I know the objections that SAA staff will raise to this suggestion. The database can't accommodate flexible scheduling. The SAA needs to pack in thousands of papers, so we can't make time slots longer without lengthening the meeting. One thing that may be feasible (given the SAA's idiosyncratic proprietary database) would be to allow open 15-minute slots for discussion within a session. The goal here is to increase discussion and the exchange of ideas.

(2) Add special lectures and events. The geography meetings have quite a few special, sponsored lectures. A number of the major journals sponsor such lectures at the meeting, and many of the AAG interest groups have sponsored lectures (they have larger and more active interest groups than we have in the SAA, which is an interesting difference worth thinking about). Major awards (e.g., book awards) may be tied to a featured lecture. Each sponsored lecture is announced in the program, and most have one or two respondents, followed by discussion with the audience. Some have wine and cheese receptions after the talk. The speakers are top people in geography and they tend to give very good lectures, typically on a broad or synthetic topic. I think they may get an honorarium.

The SAA has very few events like this (e.g., the Fryxell lecture). The sponsored lectures at the AAG meetings are well attended, and they get people talking and arguing. These sessions are much more interesting than the typical SAA symposium, with a bunch of rushed 15-minute talks and no discussion (and then, quick! vacate the room so the next session can start on time!).

I'm sure there are other things we could do to improve the intellectual content of the annual meetings. Attending the AAG meetings made me see what a rut the SAA meetings have fallen into. Perhaps we can apply some of the creativity that we normally use in our research to our professional topics, from meetings to journals to websites.

Michael E. Smith
Tempe, Arizona

NEW INITIATIVES FOR THE SAA

Barbara Mills

Barbara Mills is the Secretary of the Society for American Archaeology.

In recognition of the upcoming 75th Anniversary Meeting and the opportunity for reflecting on SAA's future, the SAA Board of Directors held a special meeting this January to brainstorm about ways that the Society could better serve its members and the archaeology of the Americas. We began with the question—What will the SAA look like at our 100th anniversary meeting (in 2035) and how can we help change practices now to better match current and future needs?

The primary issues that we identified were an increasing need for archaeologists at the global scale, how to better serve archaeologists throughout the world and especially in the Americas; how to incorporate more digital media into our publications, as tools for collaboration, and at meetings; and how to serve our different constituencies, including our student members. We discussed how the SAA is now highly diversified in terms of sectors of employment with a robust student membership and members in both applied and academic environments. Yet, we also recognized that there is a pressing need to diversify our membership, especially to increase the number of members from Latin America and from underrepresented minorities, and to ensure that student members remain associated with the Society after graduation.

For the SAA to better serve our various current and future members we voted on several major new initiatives, and identified tasks that will, we hope, lead to still other initiatives.

Student-Focused Initiatives

A large number of our members are currently students and the Board discussed several ways in which they could be better served by the Society. Many of these suggestions come out of reports and recommendations by the Board Subcommittee on Diversity and the SAA Student Affairs Committee.

1. Establishment of a Minority Scholarships Committee and tasking the committee to draft a description of a new scholarship program. The Society will need to begin fundraising for this initiative to be realized. Once the scholarship program has been conceptualized and approved by the Board, that will be the next phase of this initiative.
2. Creation of a Task Force on Student Professional Development Initiatives. The first charge is to create and implement a program for the annual meeting in Sacramento for noon on Friday and Saturday focusing on two topics, one for each day: (1) honing CVs and resumes for different job contexts (a bring your resume event); and (2) speed chats with high-profile experts on career issues with representatives from CRM, museums, tribal organizations, government, and academia. The second charge to the task force is to create a longer-term program for student-centered professional development at the meetings, including an evaluation of the Sacramento events.
3. The Board directed the staff of the SAA to incorporate more web pages on the SAA website in Spanish translation, especially those that might be of practical use for students in Latin America. Board member Barbara Arroyo will provide translations of key pages and will be asking for members to volunteer their assistance on other pages.

Better Serving SAA Members in Latin America

The Board discussed the many challenges for members in Latin America to attend our annual meetings. We initiated planning for a SAA meeting outside of North America during late summer, to bring together SAA members from Latin America, and asked the Committee on the Americas to help develop a proposal. We are calling this the *SAA Conferencia Intercontinental,* and we voted to begin planning a July 2011 meeting in Central America. The possibility of Panama is being explored. The Conferencia Intercontinental would be structured quite differently from our annual meeting. It would likely be smaller and shorter with few, if any, concurrent sessions, topically oriented, and paper presentations would be competitive (with posters open to all).

Publications

Many SAA members see our journals as one of the primary benefits of membership. The Board is committed to providing the resources and support for maintaining excellence in *American Antiquity* and *Latin American Antiquity*. The availability of our magazine, *The SAA Archaeological Record*, in digital form for members and nonmembers was approved at a previous Board meeting and we see that as filling an excellent niche. At the

same time we recognize that there are many members who do not see their work in either *AA* or *LAQ*, but who have important contributions to make to the profession. To serve this sector of the SAA, a major initiative in the planning stages is the establishment of a new peer-reviewed SAA journal focusing on the practice of archaeology. We envision a publication that has shorter articles than our other peer-reviewed journals, with articles illustrating archaeological practice and problem-solving in the field and the laboratory. We anticipate that contributors would include a large number who are archaeologists working in non-academic sectors.

Strategies for Making a Large Meeting Seem Small

The Board recognizes that the size of the SAA annual meeting can be challenging for interaction and to the intellectual content of sessions. Several possible strategies for making the meetings more interactive were discussed and we approved the following changes to our annual meeting.

1. A Board-sponsored session that will focus on current research along a particular theme, to be initiated at the Sacramento meetings.
2. The addition of one or more 15-minute slots in organized symposia for audience discussion. For every two hours of a session, a 15-minute slot will be optional.
3. Adding a new category of session called "Debate" to the possible sessions at our annual meetings. The definition and structure of a debate will be defined in the Call for Submissions

SAA Committees

The Board reassessed our committee structure, committee charges and composition, and committee member selection procedures. We recognized that many committees that were formed for a particular purpose had achieved their goals, other committees had new initiatives not reflected in their charge, and the committee selection process needed to become more open and transparent. Concrete changes that we are making include,

1. Revision of the committee member selection process to make it more open and transparent—and especially to encourage greater student participation. At their spring meeting, the Board will be reviewing an appointments policy, at which time the Board will also look at lengths of terms. An annual forum with the SAA Board will be initiated at the Sacramento meetings to answer questions about committees, to discuss how to get involved in SAA committee work, and to encourage broader participation by SAA members.
2. Addition of two mandatory student members to most committees, with the exception of those for SAA Awards, increasing the total size of these committees.
3. Several committees were sunsetted because their goals had been reached and/or are now part of the charges of other committees.
4. Language regarding charges and committee composition was standardized.

Professional Development

Professional Development was discussed in the context of the idea of "life-long learning." A number of ideas were discussed on how SAA could be involved in professional development beyond workshops at the meeting including serving as a clearing house for opportunities offered online and face-to-face in venues around the country, expanding the idea of technical workshops to include current theoretical trends or summaries of regional archaeology, and providing specific opportunities to students to enhance their professional development (resumes, CVs, interviewing for a job, cover letters, etc.). The Board established a Task Force on Workshop Development and charged them with identifying topics, formats, and venues for professional development.

The Board remains committed to being responsive to member needs. Because there has not been a member needs survey since 2003, and there are data that the Board needs to collect from the membership in order to continue to address member needs, the Board approved the expenditure of funds for a member survey to be conducted in 2010 with the results provided to the Board no later than spring 2011. We look forward to your input on the member survey and welcome comments and suggestions on any of our new initiatives.

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THE FISCAL CHALLENGE FACING HISTORIC PRESERVATION

David Lindsay

David Lindsay is Manager, Government Affairs for the Society for American Archaeology.

The President released his proposed budget for Fiscal Year 2011 this past week, and for historic preservation it was not a particularly encouraging moment. While some programs would receive the same amounts as in FY2010, and a few would see modest increases, several key programs vital to the historic preservation mission have been targeted for elimination. Even if preservationists succeed in preventing these cuts from taking place, however, federal (and state) budgets are likely to only grow more constrained going forward. This budget request could be a sign of a continuing long-term trend that will see cultural resources programs high on the list of proposed targets for spending cuts.

Specifically, the President's budget seeks to zero-out funding for Save America's Treasures, Preserve America, and Challenge Cost Share grants. The total savings would amount to $47 million. Several other accounts would also be hit hard, including Heritage Partnership Programs, which would be reduced by half. Grants to tribes and museums under the Native American Graves Protection and Repatriation Act would be cut by 25 percent. Some may argue that such reductions would be inconsequential in the more than $3 billion Park Service budget. But it is the optics of the situation that matter. Without those cuts, the overall Park Service request would be higher than last year's. For an administration facing a deficit of more than $1.6 trillion, and proposing a three-year spending freeze on many domestic programs, every little bit counts.

Why is this happening now? The political and policy realities of the federal deficits are becoming too large to ignore. The federal government has run trillion-dollar plus deficits for the past two years (on top of deficits throughout the Bush years), mostly for propping up the financial sector, paying for the wars, and providing the economic stimulus package. All of this is taking place against a backdrop of severe economic recession, high unemployment, and multiple state and local budget problems. There are signs that a deeply anxious public is prepared to express its concerns. The lesson many in Washington are drawing from the Massachusetts Senate election is not opposition to health insurance reform per se, but opposition to overall federal spending that seems to be out of control and benefiting the people who caused much of the havoc to start with. Whether or not that is the correct conclusion is unknown, but it is certainly a factor, and the President apparently feels he has to change course—the problem is where to find some savings.

The biggest drivers of the deficit are the overseas military operations, certain provisions in the tax code, interest on the national debt, and domestic entitlement programs, in particular Medicare and Medicaid. While involvement in Iraq could continue to wind down, there's no end in sight in Afghanistan, so security spending is likely to stay level, at best. Interest on the debt continues to grow, consuming an ever-larger percentage of the budget. The entitlements, in particular, have enormous built-in costs that are only going to grow larger unless they are reformed, but making any changes to them would be more difficult than the now-on-hold health insurance reform effort by orders of magnitude. In addition, further federal intervention in the financial sector and economy cannot be ruled out.

Yet cuts must be found somewhere. We can expect increasing pressure on most domestic spending programs, including those dealing with cultural resources. Preservation advocates will have to fight even harder to maintain current program spending levels. It's a fight that must be waged, but at the federal level, in particular, it will largely be a fight to maintain the status quo.

ENGENDERING THE ARCHAIC OF SOUTHERN ARIZONA

Barbara J. Roth

Barbara Roth is a Professor in the Department of Anthropology at the University of Nevada, Las Vegas.

Many years have passed since David Hurst Thomas first discussed the "invisibility" of women in the archaeological record of prehistoric foragers in the Desert West (Thomas 1983:439). While we have come a long way in addressing issues of concern to hunter-gatherer researchers, we have not necessarily taken the same steps in addressing gender in that same archaeological record. Incorporating gender should be an important component of this research, however, as it provides a more holistic view of the past and strengthens our understanding of labor organization, interaction, and social behavior in general.

Despite strong movement forward in incorporating gendered views into our concepts of prehistory in many portions of North America, Archaic research in the southwestern U.S. has lagged significantly behind. A perusal of recent journal articles and book chapters shows few on gender research on the Archaic period, and even fewer on the Southwestern Archaic. While gender is sometimes addressed in CRM reports, it has not become a significant topic of investigation and discussion in Archaic period studies in the Southwest. In essence, this paper is a "call to action" for researchers on the Archaic period in this region to incorporate gendered views into their investigations. I approach this by providing examples of this from my own work on Middle and Late Archaic/Early Agricultural period forager-farmers in the Tucson Basin of southern Arizona.

Why Study Gender?

I came to study gender in large part because of a chapter written by Ruth Tringham in 1991, where she questioned "Why have archaeologists produced a prehistory of genderless, faceless blobs?" (1991:97). I realized that much of my research up to that point had focused on "hunter-gatherers" or "groups," without giving those people faces, and subsequently became interested in peopling the sites that I was investigating. It is important to note that the concept of investigating gender does not equate with investigating only women; gender researchers have long since moved beyond the "add women and stir" phase (Conkey and Spector 1984). Gender research today incorporates the multiple complexities of the prehistoric social world, including women and men of all ages and social categories.

One of the most common criticisms of investigating gender at forager and early farmer sites is that it is impossible to do with the limited remains that comprise the Archaic archaeological record, a factor also noted by McBrinn (this issue). The idea is that you cannot "see" gender in the archaeological record of foragers like you can in more socially complex societies. But, as other gender researchers have cogently noted, you cannot "see" a settlement pattern either; it is an interpretation of the distribution of archaeological remains. If we begin to incorporate gender into our interpretations, I argue that it does, in fact, become visible.

Examples from the Tucson Basin

To illustrate how gender can be addressed using archaeological data on Archaic period occupations, I draw from two areas that I have examined in my research on the transition from foraging to farming in the Tucson Basin. The first involves Middle Archaic land use and the second involves the shift to more intensive use of the floodplain during the Late Archaic/Early Agricultural period. Middle Archaic period (ca. 3500–1500 B.C.) sites in the Tucson Basin have been recovered primarily from two resource zones: one along the foothills of the mountains surrounding the basin in the palo verde-mixed cacti vegetation zone, and a second along the river floodplain. The artifact assemblages recovered from sites in both of these zones indicate generalized hunting and gathering activities. The remains point to a seasonally mobile subsistence strategy with the repeated use of locales in productive resource zones; for example, adjacent to major washes that extend from the mountains surrounding the

basin or in lush microenvironments containing riparian vegetation along the floodplain.

While this general model of Middle Archaic land use has been useful for examining the transition from foraging to farming, it is also possible to engender this seasonal strategy using the same kinds of data used to evaluate settlement and subsistence strategies. Sites in the upper bajada (mountain pediment) generally contain a range of stone tools and ground stone, with subsistence data pointing to the use of locally available plant resources, especially cacti, and hunting focused on deer and rabbits. The stone tool assemblages from these sites are consistently dominated by bifaces and scrapers, with small one-handed manos and slab and basin metates comprising the ground stone assemblage. Hearths are the most common feature recovered at these sites, although some ephemeral structures have also been identified (Bayham et al. 1986; Dart 1986; Halbirt and Copus 1993). Although these sites have been subjected to a number of post-depositional disturbance processes, the distribution of tools and features suggest a very flexible use of space, lacking any evidence of spatial segregation. The "engendered" data from these sites can thus be interpreted, using ethnographic analogy from a range of arid land hunter-gatherers and farmers, as reflecting a flexible division of labor. It appears that men, women, and children moved seasonally to gather resources, incorporating both hunting and gathering, as described by Kolvet in this issue for ethnographic groups in the Great Basin. Family groups were apparently the major unit for production and consumption at these upper bajada sites (see Murdock and Provost 1973).

The floodplain occupations point to a similar scenario during the Middle Archaic period. Data from the buried Middle Archaic component at Los Pozos, located on the Santa Cruz River floodplain, are especially useful for "engendering" the Middle Archaic occupation of this zone. Gregory (1999) identified four strata at Los Pozos that appear to represent repeated use by Middle Archaic period foragers. Excavations focused on a stratum dating from 2000–1700 B.C. and recovered five pits and one oxidized surface. A variety of seed plants were recovered from samples from the pits and the small stone tool assemblage included a variety of unifaces, several perforators, bifaces, and projectile points. Although Sliva (1999:38) argues that the tool assemblage and recovered remains are typical of hunting camps, the evidence of seed processing, unifaces, and perforators along with the bifaces and faunal remains point to more generalized hunting and gathering activities. Ethnographic data can be used to infer that these are likely the remains of small family groups occupying the floodplain, as evidence points to the presence of male and female gendered activities. Other Middle Archaic sites such as the Arroyo Site (Bayman et al. 1986) and La Paloma (Dart 1986) indicate similar foraging activities by family groups. Specialized camps have been found, usually tied to hunting and/or lithic procurement, and these are virtually all on the upper bajada or at higher elevations (Huckell 1984; Roth 1992). Taken together, these data point to structured seasonal activities represented by patterned land use, with a generally flexible division of labor.

This flexibility has implications for how we view the transition from foraging to farming, which happens in the latter portion of the Middle Archaic period (ca. 2100 B.C.). Although debate continues about the circumstances surrounding the introduction of cultigens, the earliest maize remains are found at Middle Archaic period floodplain locales where cultigens and storage pits were apparently added to typical Middle Archaic assemblages (Gregory 1999; Thiel and Mabry 2006; Whittlesey and Foster 2007). Roth and Freeman (2008) have argued that the seasonal pattern of land use, use of seed plants on the floodplain during the summer, and technology for processing seeds facilitated the adoption of maize in this region. Initially, family groups on the floodplain continued practicing their regular seasonal activities. At some point, the decision was made to adopt cultigens and invest the labor into ensuring its successful integration into the diet. This, too, can be engendered—elsewhere I have argued that women made the decision to adopt cultigens (Roth 2006). Cross-cultural ethnographic data point to the role of women in plant gathering, processing, and storage. By comparing the suite of features and artifacts associated with these activities to the remains found at floodplain sites, it is possible to "see" women's plant-related activities just prior to and just after the introduction of maize. The most plausible scenario to account for this is that women were the primary agents involved in the adoption of maize. Their activities in processing, cooking, and storing maize were also critical to its successful integration into the existing diet.

The introduction of cultigens had significant impacts on the Archaic period foragers who adopted them. Recent research at sites on the Santa Cruz River floodplain points to a dramatic intensification in the use of the floodplain following this introduction, reflecting a reorganization of seasonal patterns and an increasing focus on the floodplain zone, where early farming activities took place. This is apparent in the recovery of large floodplain sites with many houses, hundreds of processing and storage pits, canals, and increasingly diverse artifact assemblages. Although no formal village arrangement is apparent at these sites, the overall organization of these floodplain sites appears to reflect an increasingly structured lifestyle for the families living there. Clus-

ters of features that have been interpreted as representing family groups have been identified at many of the major floodplain sites, including Los Pozos (Diehl and Gregory 2002), Las Capas (Whittlesey et al. 2007), and Valley Farms (Roth and Wellman 2001; Wellman 2008). These clusters usually consist of one or several structures and associated extramural pits, including storage, roasting, and other processing pits. Artifact and feature patterning indicates that discrete areas were used for food processing and storage, ethnographically associated with female activities, and lithic production, ethnographically associated with males. Hunting took place off-site, and numerous specialized hunting locales have been recorded in the badaja slopes surrounding these floodplain sites, again ethnographically associated primarily with males. Canal construction and maintenance may have been done by cooperating families, but ethnographic data point to these activities being primarily done by males.

The implications are that the introduction of cultigens and increasing sedentism led to changes in the way that labor was organized, with a less flexible and more structured division of labor. This was likely a response to scheduling issues, as gathering, planting, and hunting tasks, along with canal construction and maintenance, would have required more planning and more clearly defined tasks. Thus, while we tend to focus on the economic impacts of cultigens, they had significant social impacts as well.

Steps Toward an Engendered Archaic Period

The Archaic period in southern Arizona *was* an engendered past. Men and women, young and old, lived, worked, ate, moved, interacted, fought, and celebrated. By giving these people faces, by seeking to examine who did what and how those social interactions occurred, we can begin to more fully understand the transitions that occurred in their lives. Taking a gendered approach can provide significant insights into their past.

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IS SHE INVISIBLE?

IDENTIFYING GENDER IN FORAGING SOCIETIES

Maxine E. McBrinn

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From the beginning of the undertaking, archaeologists calling for recognition of and research into the effects of gendered social patterns explicitly addressed that need in the study of hunter-gatherers (e.g., Conkey 1991; Conkey and Spector 1984; McKell 1993; Sassaman 1992). Conkey and Spector cogently argue that the material culture of women is visible, even in the Paleolithic period, if only we look for it: "We argue that the archaeological 'invisibility' of females is more the result of a false notion of objectivity and of the gender paradigms archaeologists employ, than of an inherent invisibility of such data" (Conkey and Spector 1984:6). To answer to this call, archaeologists have used a number of strategies. Some have re-examined what we think we know about how stone tools were made and used, while others have focused on other technologies. Some have reconsidered subsistence patterns to identify the roles that women may have played, while still others have looked for differential uses of space. This paper only brushes the surface of some of these research approaches as background to propose that fiber industry artifacts offer great potential in considerations of the role gender played in early hunting and gathering societies.

Women and Technology

The material remains at many, but not all, sites used by foragers are limited to stone and bone, and much more often only the former. Women have long been associated with ground stone tools, but these have not been extensively studied at most sites. Some archaeologists have made the claim that because chipped stone tools would have been, in large, created by men, the material culture of women has not been preserved. If this were true, it would indeed make it more difficult (if not impossible) to find a record of women at sites inhabited by gatherer-hunters compared to sites made by more complex societies. McKell (1993), among others, has refuted this idea on ethnographic grounds, pointing out that there are multiple Australian societies where women were noted as making stone tools.

A number of researchers have examined the technological record created by hunters and gatherers and proposed that we can see the actions of women in the past and, importantly, distinguish the material record made by men from that created by women. For example, Gero (1991) suggests that women may be visible through the use of flake tools, especially those found in domestic contexts and made of locally available materials, although she also argues that women might have had more access to more exotic materials than is commonly assumed and that they might have made and/or maintained formal, curated stone tools in addition to expedient tools. Likewise, Sassaman (1992) suggests that women might have created a higher proportion of expedient stone tools, in part due to their activities being centered on the campsite. If men went on hunting trips of several days duration, this would have required them to make and carry tools that minimized the risk of breaking. This would mean that men were more likely to make and use curated stone tools.

Women might also have been creators as well as users of bone and antler tools and other objects made from these materials. Conkey (1991) and Dobres (1995), in particular, have examined the Magdalenian material culture to develop an understanding of how these objects were made and used. Both of these studies stress that gender roles may have been more flexible than man-the-hunter and woman-the-gatherer, and that many procurement and production activities were made of multiple, smaller tasks, each of which was critical to achieving the end goal. Whether the end goal was hunting and killing large game or manufacturing new tools, women and men might have worked together to achieve it. The assemblages we find at most sites do not necessarily represent the labor of only one gender.

Women and Subsistence

Some researchers have argued that women's behavior is likely to be reflected in subsistence activities. One food procurement question addressed by a number of archaeologists is

whether women were hunting, and if so, how their activities might be distinguished from those of their male partners, colleagues, and kin (e.g., Brumbach and Jarvenpa 1997; Kent 1998; McKell 1993; Wadley 1998). This question refers back to the idea that many hunter-gatherer sites offer largely stone and bone artifacts, and whether such sites reflect the actions of both men and women. Most researchers acknowledge that women did hunt in some historic societies, and that even where women were not hunters, they often participated in transporting and processing meat. This pattern is likely to have been true in the past as well. In addition to big game hunting, prehistoric women might have hunted smaller game using traps, snares, throwing sticks, and even bows and arrows. The message is familiar: the activities of men and women were probably intertwined during many times and at many places.

The above approaches are both motivated and justified by the use of ethnographic analogy, even in cases where the researchers discuss their distrust of and disquiet with this approach. They point out (e.g., Kent 1998:39) that ethnographic analogy is flawed. It does not take into account variability or history. There are few hunting and gathering peoples today, and those who remain have experienced significant disruptions to their cultural traditions from farming and pastoral neighbors, missionaries, market economies, and new technologies. Contemporary foragers are unlikely to perfectly duplicate ancient people. In other words:

> I look at cross-cultural relationships and what influences these relationships, rather than using an analogy that assumes that how one society defines gender is appropriate for how all societies define it. My own ethnographic work shows that hunter-gatherers have very different concepts of gender, dependent on the complexity of their sociopolitical organization. Ethnographically consistent relationships, not ethnographic analogies, are imperative if we are to achieve archaeological understanding, because they allow archaeologists to see the full diversity of non-Western cultures [Kent 1998:39-40].

Yet we cannot easily shake off the dust of ethnographic analogy because we require some guide to allow us to see the variety of possible lifeways. We can only use the tool as carefully as possible, acknowledging that we will never see a perfect reflection of the past.

Women and Fiber Industries

Some sites and regions offer largely unappreciated possibilities, with additional artifact classes to consider. Specifically,

Figure 1. Late Archaic sandal from Fresnal Shelter, N.M. (Catalog number 01.E25.147). Eastern New Mexico University. Photo by Maxine E. McBrinn.

fiber industry artifacts, otherwise perishable, are sometimes preserved by wet or dry conditions. In the U.S., these artifacts have occasionally been found at sites in the Pacific Northwest, and at caves and rockshelters in the Desert West, especially in the Southwest and the Great Basin. Fiber artifacts are also infrequently found in other areas. Ethnographic evidence largely supports the idea that women were often the manufacturers of baskets, cordage, sandals, and woven textiles, although this relationship is by no means universal. Because there are known exceptions, such as the historic Pueblo male spinners and weavers, this argument should not be made uncritically.

The existence of fiber artifacts has been used to indicate the presence and labor of women (e.g., Jolie et al. 2009), as has finding textile-manufacturing tools like spindle whorls (e.g., Brumfiel 1991). Conkey (1991:76-77), among others, suggests that some bone and antler Magdalenian artifacts, including needles and awls, were used to make cordage, nets, and perhaps even woven textiles, likely women's work. Other tools (Conkey 1991:Figure 3.5, 76), like perforated harpoons, support this interpretation by implying the use of cordage or lines.

Fiber industry artifacts have been used widely for a century or more to examine social identity among hunters and gatherers, as well as more complex societies. The artifacts used for this kind of analysis, especially for foraging societies, include basketry and mats (e.g., Adovasio 1986), cordage, and sandals (e.g., McBrinn 2005, 2008). These artifacts are well suited for enquiry into social identity and ethnicity for several reasons. They were manufactured using an additive

Figure 2. Early Holocene rush mat or basket fragment excavated at Guitarrero Cave in the Peruvian Andes by Thomas F. Lynch. Note the adhering residue and use wear. Photo by E. A. Jolie courtesy of T. F. Lynch.

technology, meaning that earlier manufacturing steps are still observable in the finished product, and they are complex, made by incorporating the results of multiple processes. As a result, they display many attributes for the analyst to consider. Moreover, many of these attributes are either hidden, as in the foundations of coiled baskets or the warps inside a weft-dominant plain weave sandal, or are so small that they are unlikely to deliberately signal social information, as in cordage plying direction or the splices in a coiled basket. Other attributes, of course, are quite visible, such as basket shape, manufacturing technique (for example plaited, twined, or coiled baskets), and decoration.

Mary E. King (1975:11–12), quoted in Petersen (1996:10), says of archaeological textiles, including cordage, baskets, and fabrics:

> I have come to regard [archaeological textiles] as perhaps the most culturally revealing of all categories of artifacts... While textiles can serve [various] purposes, most of their uses are highly personal... Clothing becomes an extension of one's body and personality... Consequently, archaeological textiles could and should tell us a great deal about the behavior of people in the past.

Gender and gender roles have always been considered and analyzed in discussions of ethnographic textiles and archaeological fiber industries. For example, men and women often wear different kinds of clothing (Petersen 1996:10-11), so finding fiber aprons at a Basketmaker site in the U.S. Southwest immediately confirms the presence of women.

Textiles also offer more subtle ways to examine gender. We know from ethnographic research that in some societies, both men and women made perishable artifacts. In some of these societies, craft training for men and for women was different enough that men spun cordage destined to be incorporated into other objects in the opposite direction than women (Fowler 1996:186; Minar 2000:97). At a site created by such a society, some kinds of artifacts would include cordage consistently spun s-wise, while other kinds of artifacts would be made with cordage preferentially spun z-wise. Similar patterns might be found in other attributes, perhaps in twining direction, or possibly even in different coiled basket foundations. Thus careful examination of these artifacts might allow an archaeologist to identify differential gender roles and their attendant material culture.

Fiber industries, furthermore, broaden our view of the past to incorporate a wider range of activities and perhaps even a wider variety of people. With careful examination, we are likely to see the labor and activities of men, women, and even children through the fiber-based containers, clothing, traps, and nets that they made and used. Although fiber artifacts are relatively rare, when available they offer too much potential to not incorporate them into our research of the gendered past. They might add richness and color to our reconstructions of ancient societies.

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GENDER AND THE GREAT BASIN ROOT CAMP

A SEASONAL SITE REVISITED

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Recent interest in social identity at the group or individual level has fueled a wave of archaeological studies. Social groups are being examined at various scales including gender, age, class, religion, and ethnicity (Mills 2004:4). In the American Great Basin, previous research related to human antiquity, and human responses to changing environments and foraging decisions have laid an excellent foundation for the study of the gendered household. While an archaeological focus on individual identities and the household may generate as many questions as answers, new studies and a growing database are our best hope for resolving questions related to household organization, gender roles, and the status of women and children.

We can accelerate the process by re-examining data from previously recorded residential sites, as is attempted herein. This paper reviews original field records from a seasonal occupation area in the Buffalo Hills of northwestern Nevada, in traditional Northern Paiute territory. The earlier research was done in conjunction with a University of Nevada, Reno study in the 1990s that used a cultural ecological research approach (Kolvet 1995; Kolvet and Eisele 1993).

Recognizing the material signatures of males and females of all ages can be subjective. For the Great Basin, our assumptions are often derived through the use of ethnographic analogy. Ethnographic sources and historic accounts are considered useful tools for the interpretation of relatively recent sites and are referenced along with archaeological data. For the sake of brevity, my discussion mainly focuses on one site known as Wildcat-5 (WC-5). This predominantly Late Archaic (1300-600 B.P) occupation has spatial and material attributes commonly associated with traditional male and female activities such as hunting and root gathering (Figure 1).

Background

The social organization of Great Basin foragers is best described as small to large egalitarian bands consisting of nuclear or extended family units. Archaic family groups typically followed a semi-mobile lifestyle and moved about traditional use areas in response to seasonal fluctuations in resources. Families socialized and celebrated with extended family and neighboring groups during pine nut and root harvests. Up to ten families camped together on valley floors during the cold winter months. Stored harvests and shared resources helped to fend off the ever-present threat of starvation.

In the high desert, rich ecotones were revisited year after year. We know that basic needs of women and children played a major role in settlement location (cf. Zeannah 2003:6). The perennial springs and riparian zones in the Buffalo Hills would have offered excellent foraging opportunities for women. A variety of nutritious root crops that thrived in the rich, clayey soils were a major draw to this area. The archaeological record attests to the area's popularity.

The sites in this complex are located in and around a narrow canyon with perennial springs, diverse vegetation and rich animal habitat (Figure 2). At 5,700 feet above sea level, the plateaus and canyon are dotted with juniper, big sagebrush, grasses and forbs. Ethnographic food sources such as service berry, currant, gooseberry, chokecherry, and edible grasses grow freely. Several root crops including biscuit-root, Yampah or epos, and sego lily are locally plentiful, and watercress forms a mat around spring-fed ponds. Pronghorn antelope, bighorn Sheep, mule deer and a variety of small to medium mammals are drawn to the springs and browse cover.

Kelly (1932:100-101), Park (Fowler 1989), and Couture et al. (1986:153) describe the importance of "Root Camp" to Northern Paiute people. The amount of roots harvested annually was by all estimates, quite considerable (Delacorte 2002:44). For approximately six weeks, beginning in late April, one or more family groups left their base camps and headed for the uplands to engage in root gathering, socializing, and trade.

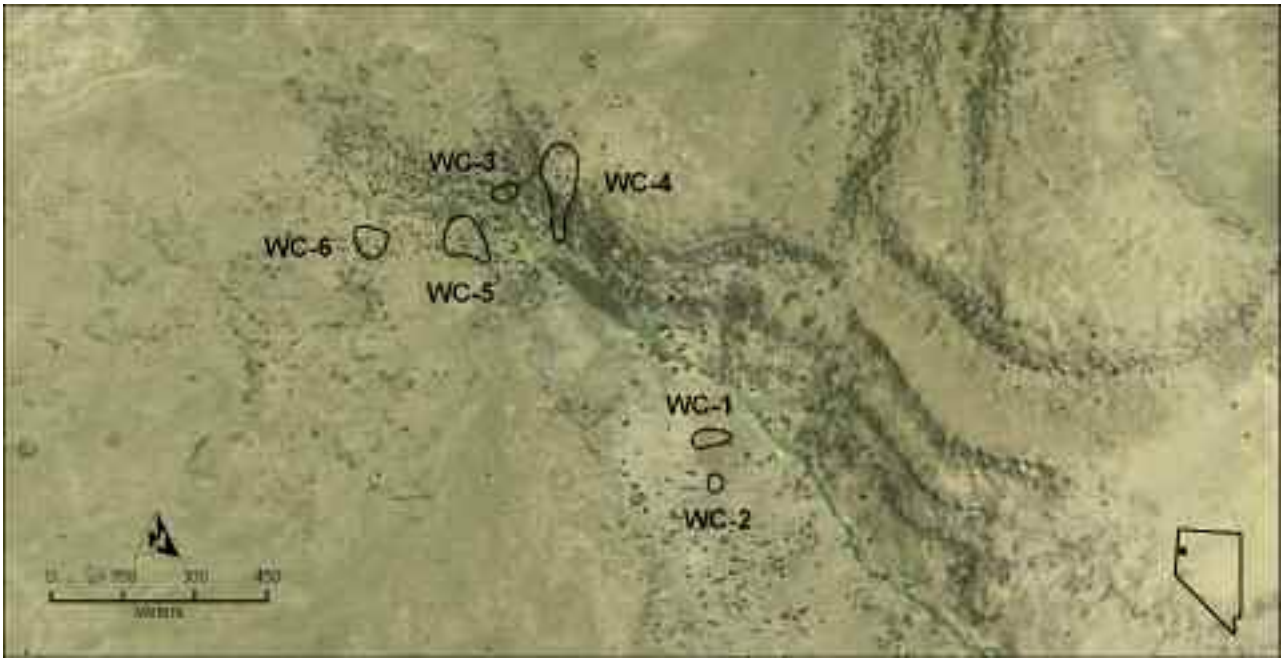

Figure 1. Aerial photograph showing relationship of Wildcat sites (NAIP July 12, 2006).

Traditionally, root gathering was considered a female pursuit although other family members accompanied them to root camp. Dense cultural debris and projectile point chronologies indicate that the Buffalo Hills were seasonally occupied for thousands of years. The Wildcat Spring area appears to have been a favorite root camp destination during more recent times.

Although sites WC-1, WC-2 and WC-3 have abundant ground and chipped stone artifacts, distinct residential features are limited to sites WC-4, WC-5, and WC-6 at the north end of the canyon. WC-5 is the only site with hunting blinds and a residential feature. The 1,200 m^2 site overlooks an active spring on the canyon floor 200 feet below (Figure 3). Three conjoined rock blinds sit inconspicuously at the edge of a cliff. A dense accumulation of chipped stone artifacts is immediately outside of the blinds. An associated rock art panel with curvilinear elements (circles with tails) is located under an overhang 100 m southeast, in view of the blinds. Glyphs in the lower right portion of the panel are indistinguishable and possibly reworked (Figure 4). A single course rock ring believed to be the base of a former brush structure is 40 m west of the blinds on a slightly elevated terrace. The rock ring is surrounded by over two dozen millingstones and a dense chipped stone scatter. The ensuing discussion examines the site components individually, collectively, and within a larger context.

Hunting Blinds and Lithic Scatter

The 14 m-long by 7 m-wide blinds are positioned on a promontory with an excellent view of the springs and canyon below. The rock walls are piled as high as 1.5 m. Three test units excavated within the floors revealed less than 25 cm of sediments over bedrock (Table 1). Five projectile point fragments, including a Rosespring and Desert Side-notch, a stone knife, and a worked flake were located inside the blinds. Debitage was light by comparison to the lithic concentration immediately outside. The associated lithic concentration is mainly comprised of chipped stone artifacts including bases from three obsidian Elko series projectile points, a complete leaf-shaped projectile point, and a chert scraper. Twenty badly fractured biface tips or midsections, a well-polished boulder metate, and two manos (handstones) were also present. Debitage mainly consist of late stage obsidian, chert and a few basalt flakes.

Rock Ring and Associated Ground and Artifact Scatter

A rather obscure rock ring or base of a former brush enclo-

Figure 2. View of canyon from the northernmost sites. Photograph shows riparian vegetation surrounding spring-fed creek below.

sure is partially embedded in a low, rocky rise 40 m west of the blinds. A natural terrace of basalt boulders separates the residential and hunting loci. Circular brush structures were a common type of shelter during warmer months (Kelly 1932:105). The feature is surrounded by 15 manos and 12 unifacial metates exhibiting light to moderate usewear (Table 1). Also present are three unusual ground stone objects or "paraphernalia" (cf. Adams 2002:191) including a small, cylindrical stone. These items may have served a personal or ritual function. Two test units excavated in or near the rock ring contained dense interior and pressure flakes, abundant charcoal and calcined fragments of rodent and mammal bones. Calcined bone was densest within the rock ring. Two complete Rosespring projectile points, two utlilized flakes, several late stage biface fragments, and a lump of red ochre were also identified inside the feature.

Gender Activities at Root Camp—Examining the Data

The seasonal availability of aboriginal plant foods, particularly roots, and wildlife migration patterns suggest a late spring to early summer occupation for the site. The springs and canyon margins were the centers of activity and cultural materials diminish or disappear with distance from the canyon edge. Site and artifact distributions imply that family groups from Duck Flat (to the north) or Smoke Creek Desert (to the south) entered this canyon from the north fork of Buffalo Creek, three miles to the southwest.

Regional ethnographies suggest that more than one family occupied the same root camp. Root harvesting was traditionally a female pursuit although men were instrumental in moving and setting up camp. So, what role did male mem-

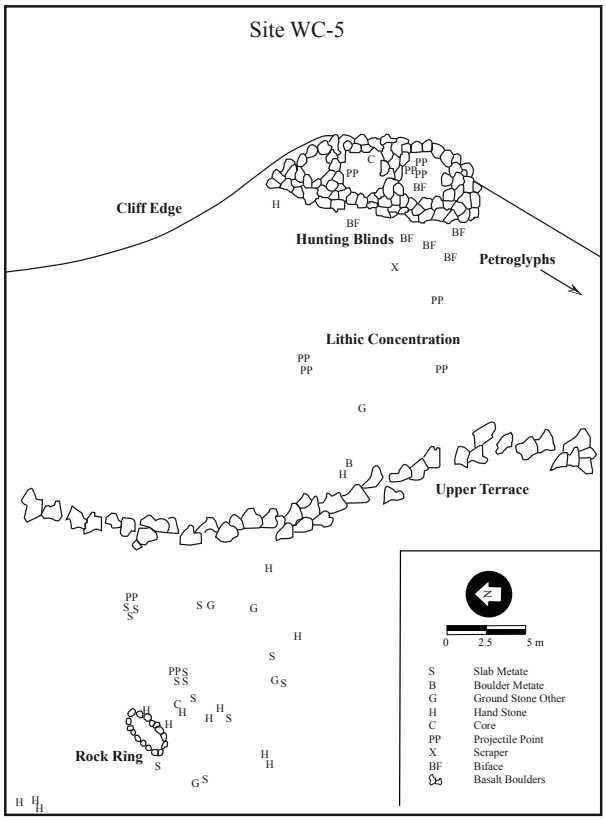

Figure 3. WC-5 site map.

ber of the family play after the family settled in camp? In pinyon country, Northern Paiute men left the women at pine nut camp and went fishing. They eventually returned with their catch (Fowler 1989:10). Further west, the Honey Lake Paiutes liked to dig roots where there was good hunting (Riddell 1978:50). The rock blinds and projectile points at WC-5 suggest that men indulged in small scale hunting while the women gathered roots. The material signature of small-scale hunting was described in the Fort Sage Drift Fence study:

> Low-density intercept hunting (Binford 1978; Thomas 1983, chap.4) leaves evidence in the form of small rock blinds, occasional "boredom reducers" (such as retouch chippage scatters, whittling debris, and cached hobby items), and the occasional repair discard. This debris gradually accumulates as isolated hunters monitor diurnal game movements from the same blinds or natural overlooks. [Pendleton and Thomas 1983:29]

The blinds could have accommodated two or more hunters. The men may have performed limited tool maintenance while they watched for prey animals en route to the watering hole below. The late stage debitage, pressure flakes and broken cutting tools in the adjacent lithic concentration indicate that butchering and tool maintenance occurred outside the blinds where space and noise were lesser issues.

The style and limited extent of the rock art also holds clues to gendered activities at root camp. Recent studies near Warner Valley, Oregon determined that rock art occurs most often in residential contexts with milling stones, chipped stone, and middens. Rock art was also present in plant harvesting areas (Cannon and Ricks 2007:122; Cannon and Woody 2007:37, 40, 44). One might easily surmise that the similar-looking glyphs at WC-5 were made by a single individual. Going a step further, the indistinguishable peckings to the lower right may represent the etchings of small children playing alongside their mother. Young children were known to stay close to their parents. As Whiting (1950:105) concluded, children's pastimes were "centered in aping adult life."

The remains of a brush enclosure, milling stones, burned faunal materials, and dense charcoal from campfires, suggests that upper WC-5 was the scene of meal preparation, family dining, and shelter. The light-to-moderate, discontinuous usewear on unshaped milling stones surrounding the brush stucture is not consistent with the smooth usewear surface produced by seed grinding. Similar patterns were observed in the Modoc Plateau uplands, southwest of the Buffalo Hills where archaeologists associated the irregular millingstones with the skinning or grating of roots (Delacorte 2002:46-47). For WC-5, millingstones may also have been used for sharpening digging sticks or pounding and processing small game. According to Kelly (1932:101,110) roots were skinned and boiled, or eaten raw while in camp. Sizeable quantities were dried, temporarily stored below ground, and later transported back to the base camp. The occupants of WC-5 also subsisted on game, including rodents and small mammals. Small animals were often cooked whole and eaten in their entirety. Willard Z. Park's informants described how rabbits were processed (Fowler 1989:29):

> When rabbits were roasted, women broke up the whole rabbit when it was cooked....Rabbits are pounded up, bones and all...after they are roasted. When it was well pounded, the meat was ready to eat.

The faunal remains associated with the brush structure consist of miniscule fragments of burned rodents and small and large mammal bone (Hockett 1995). Generally speaking, trapping small game was performed by women and hunting large game was performed by men. The faunal remains suggest that both males and females and possibly older male children (Whiting 1950:105) contributed to daily meals.

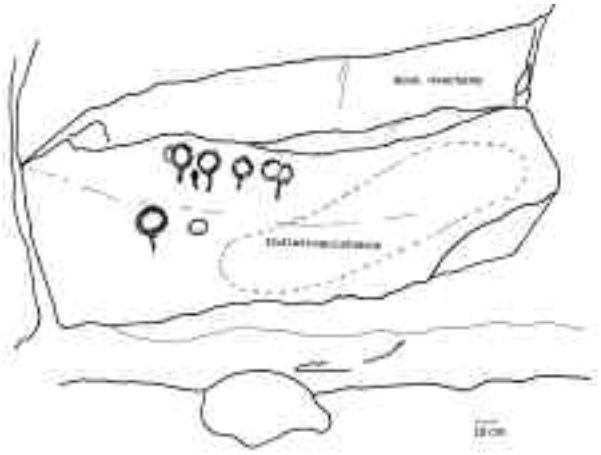

Figure 4. Low-positioned rock art on basalt boulders next to site WC-5.

Directly across the canyon at Site WC-4 is what appears to be the remains of a contemporary house structure (Radiocarbon determination 780±170 BP, cal. A.D. 890-1435 [2 sigma, 95% probability], Beta-75977 on charcoal removed from the WC-4 house ring). Residential features at WC-4 and WC-5 are separated by approximately 300 m. The residential feature at WC-4 is slightly larger than the brush structure at WC-5, has several well-worn metates in the wall, and is surrounded by dozens of millingstones. A few boulder metates exhibited usewear on convex surfaces. Two bone beads and lumps of red ochre were identified in test units placed inside the house feature. Red ochre was used by both males and females to protect their faces from the natural elements and also during dances and ceremonies (Fowler 2002:148). The small quantities of red ochre at the residential sites allude to recreational or ceremonial activities while at root camp. Furthermore, the near equal distance between residential features at the three residential sites may provide insights into inter-household relationships and social spheres, or may indicate that women exploited separate root harvesting areas. A closer look at the residential features may also shed light on special women's space and the taboos and rituals aligned with biological cycles and birthing.

Table 1. Material recovered from WC-5.

Locus	Chipped Stone Tools					Estimated Debitage				Ground Stone Tools	Charcoal, Bone, Other
	Proj Pt.	Biface / knife	Other	Total	Comments	Cortical/ Decort-ication	Interior & Pressure	Other (debris)	Total		
Hunting Blinds											
Surface	4	1	1	6	1 RSP, 1 DSN frag; 2 tips	20	200		220	Metate in wall of blind	
0.5 m^2 Probes (TU-1-3)	3	1	1	5	Unid PP frag; 1 worked flake	18	757	4	779		Miniscule charcoal and small bone fragments
Lithic Scatter (Adjacent to Blinds)	4	20	1	25	3 Elko Series bases; 1 leaf; 1 scraper; bifaces badly fractured	700	6750	50	7,500	1 Boulder metate, 2 manos	--
House Ring (Rock Ring)											
0.5 m^2 Probe *(TU-4)*	3	5	1	12	2 RSP; 1 PP tip, 2 util. flakes; 2 knife frags; 5 late stage biface frags	21	1,175	1,484	2,680		1 pc. ochre; heavy charcoal*; 162 small calcined bone fragments (100% burned)
Lithic Scatter (Around House Ring)	2		1		1 RSP; 1 CTN; 1 core	Debitage not sampled				15 manos; 12 metates; 1 other	3 aberrant G.S. artifact including one cigar shaped
0.5 m^2 Probe (TU-5)		2		2	Early stage biface frags	21	582	1,402	2,587		8 bone fragments and large enamel; some burned; charcoal

Notes: * Radiocarbon sample: 930±/-60 BP (BETA 75978), calibrated results (2 sigma, 95% probability), A.D. 1000 to 1245
Abbreviations: PP = projectile point; RSP = Rosespring; CTN = Cottonwood Triangular; DSN= Desert Side-notched

In summary, this limited re-examination demonstrates the value of revisiting previously recorded sites. It hopefully will entice others interested in identity and the gendered household. Armed with new questions, a comprehensive field examination of this site complex and others is likely to yield invaluable new data. Whether reanalyzing previous data or embarking on new ground, limitless opportunities are there for the asking.

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Note: The contents of this paper represent the views of the author and do not reflect the position of the United States government.

SUBSISTENCE STRATEGIES, AND FOCUSING, AND WOMEN IN PREHISTORY

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Patty Jo Watson and Mary C. Kennedy:

> [W]ould like to think that they [women] domesticated [plants] on purpose because they were bored, or curious, or saw some economic advantage in it, that they acted consciously with the full powers of human intellect and that their actions were a significant contribution to culture change, to innovation, and to cultural elaboration [1991:269].

The theory presented here supports their tentative conclusions that women displayed innovation, constructed complex subsistence strategies, and most likely were the first to domesticate plants.

The dominant argument in archaeology has been that climatic change and increasing population pressure are the key factors leading to cultural change. Essentially, this theoretical position regards humans as subjected to environmental stress and/or population pressure. This theoretical position has become largely a human ecology in which people respond predictably because they are governed by unchanging natural laws. Human culture is not part of this equation. Yet, it is culture that differentiates humans from other primates. The contribution a person makes to his/her culture certainly depends, at least in part, upon what that person has learned from that culture. The position taken here is that human behavior cannot be understood without considering the nature of cultural behavior.

Enculturation and Cultural Conservatism

Culture and a language with syntax are attributes that separate humans from other primates. With language, humans communicate complex messages instantly. In a single sentence they:

> pass on information about new tools, far away happenings, customs, and ... history... They have names for one another greatly facilitating social interactions, including planning and politicking... Human language gave evolution a new playground. Syntax... gave rise to new and complex possibilities of cooperation and fairness, deception and manipulation... Language has, most importantly, led to a new mode of evolution. *Information drives evolution* [Nowak 2000:44, emphasis added].

Through the transmission and acquisition of language and culture, i.e., the process of enculturation, patterns, plans, and rules for speaking and behaving are learned so well that they rarely rise to the level of consciousness (Herskovits 1948; Linton 1936). Early in life we are able to combine morphemes into sentences that we, and others, can understand even if the sentence has never before been produced. This is also true of human behavior; we are able to behave properly in social situations we have never before experienced. It is also true that individuals never learn all of their culture or language; they learn core beliefs shared by most members of the society, and beliefs and skills shared by members of the specialized groups in which an individual participates. Enculturation thus provides humans with the "syntax" of their culture. Some rules of behavior and beliefs are internalized and become "culturally constituted beliefs" that "serve not only to guide but to *instigate action,* that is they possess emotional and motivational, as well as cognitive salience" (Spiro 1987:38). An example is the person who internalizes the religious doctrine of infant damnation. That belief motivates him to baptize his children in order to save them from damnation (Spiro 1987:38).

The basis of human beliefs, behavior, and technology is information, conveyed from one generation to the next. Enculturation is the process by which cultural information is passed from one generation to the next in a recognizable form. Each new generation is inculcated with shared knowledge of what constitutes proper language, values, beliefs, behavior and artifacts. The same process instills in each generation ethnocentrism, cultural conservatism, and biases.

"Cultural Interests," "Cultural Focus," and Cultural Change

A cultural interest is an object, natural phenomenon, occupation, or abstraction that has meaning for two or more members of society, and becomes permanent or recurs regularly and acquires associations (Linton 1936:422). When some portion of society is involved in a specialized activity, a system of cultural interests is shared by members of that activity. Linton (1936:306–307) wrote "the conditions of social life . . . make it possible for a . . . limited group of individuals to work. . . together, stimulating each other's minds by an exchange of ideas and contributing to the final invention." M. J. Heskovits derived the concept of "cultural focus" from Linton's "cultural interests." Herskovits wrote that because cultural interests are important to people they

> think and talk a great deal about personalities, events, and possibilities lying in these [important] aspects of their culture. *As a result of these interests and the concomitant discussions that are carried on, possibilities for realignment will emerge, and emerge with enough frequency so that resistance to the idea of something new will be lessened.* . . . [S]uggestion of change in a phase of life that is taken for granted and seldom discussed will meet with greater resistance than one where the phenomenon is under common discussion and various possibilities in its form and function are . . . constantly being suggested [1948:544, emphasis added].

Herskovits recognizes that the "concomitant discussions" result in the manipulation of ideas and objects, increasing inventiveness, and innovations. For Herskovits, cultural focus is a system of interests that dominates only one major aspect of culture and, through it, the whole culture. Yet, simple observation of behavior indicates that the manipulation of ideas and objects, the increase in inventiveness and innovations—the focusing process—also occurs between two or more individuals, and at all levels of cultural organization. A more accurate view of the concept of *focus* is therefore: a process whereby people physically and/or mentally manipulate things, organizations, and beliefs. This process creates greater awareness of form and function, more discussion of values, and increased variability in belief, behavior, artifacts, and structure. *Focusing is a process that may occur in any cultural component, large or small, actuated by a segment of population or the society at large; a corollary of this proposition is that, at any given time, a culture will exhibit more than one focus.* Hunter-gatherer subsistence strategies offer a useful example of how focus operates.

Innovating Change in Hunter-Gatherer Subsistence Systems

Innovations are products of human minds. They are created by recombining traditional cultural traits and behaviors, and the unique experiences of individuals. The variation in beliefs, behaviors, and technologies of a traditional culture is increased when a group of individuals come together in the *focusing process*. The personnel of a *subsistence strategy* comprise such a group of individuals brought together for a common purpose and possessing a common set of interests. The participants of the group display diversity in beliefs, behaviors, and ideas that reflect differences in individual participation in cultural specialties, individual personal peculiarities, and characteristics produced by incomplete and/or erroneous enculturation and unique learning experiences—but all share in a common cultural system.

A subsistence strategy is a plan of action devised by organized groups of individuals using systemically related technologies to procure, process, and store a resource or similar resources. Characteristics of these resources vary; consequently, subsistence strategies exhibit differences in sets of tools, facilities, techniques, and procedures, as well as in personnel and organization. Each subsistence strategy articulates differently with the environment. The hunting of bighorn sheep and collecting of seeds each require separate strategies with different technologies, skills, personnel, and plans of action. Individuals working within a subsistence strategy naturally discuss means of accomplishing the tasks at hand; they plan ahead, address problems, and discuss possible solutions. They want to succeed; they focus on the tasks, they invent and innovate. It is important to note here that a one-to-one relationship does not exist between the resource and the technology of the strategy. For example, artiodactyls can be taken in several ways; using projectile weapons, snares, or traps. The personnel involved can choose which technology will have the greatest chance for success in respect to the goal: taking the animal. The several paths to successful harvesting of plant and animal foods thus can lead to different strategies for taking them both intra- and inter-societally.

Innovations occur within a cultural context, but involve considerations of personal motivation, idiosyncratic experiences, cultural and situational milieu, and general cognitive process (Wallace 1961:124). If one approaches motivation from the standpoint of reinforcement learning theory, then one would expect the members of a society will "learn" to innovate in precisely those cultural areas in which innovation is apt to be rewarded by the society (or, at least, his part of it). These are the areas, to use Herskovits' (1948) phrase, of "cultural focus."

The personnel of a subsistence strategy share technologies, knowledge, patterns of behavior and general cultural beliefs. These are the people most familiar with the strategy, the resources, and the difficulties of the tasks. They are the ones most likely to explore ideas to improve their strategy. They know the value of an innovation that improves their chances of success, and have the final word on the acceptance of new ideas that affect their subsistence strategies. The exception to this practice occurs when the innovation negatively impacts universal core beliefs or strongly held beliefs of their, or other, strategies.

Subsistence Strategies and the Focusing Process

Linton (1936:431) wrote, "[W]here unpredictability combines with a high degree of economic importance, the rating given to the particular interest is almost certain to be high." This description applies to the nature of the focusing process in hunting strategy during the desertification of the Mojave Desert. While the focusing process is present in all subsistence strategies, it is not equally intense in all of them. At any given moment some strategies are more important than others, and one may be more important than all the rest.

Among subsistence strategies, it is generally accepted that hunting with projectile weapons is man's work, while seed collecting and processing is woman's work. Generally, hunting is more highly valued than seed collecting and processing, although the latter may in fact provide the greater source of subsistence. In the southern California interior, during the period of desertification, subsistence strategies changed as the environment changed, providing examples of the way in which cultural processes influenced the interaction between culture and environment.

Between ca 10,000 and 5,000 years ago, southern California became a desert, which resulted in significant if not dramatic changes in the kinds and/or distribution of plants and animals. The early vegetation zones moved north and upslope on the mountains, dwindled in size, and were being replaced by desert vegetation. Artiodactyls, the only large mammals, moved up the mountain slopes and northward with the change in vegetation, and their numbers decreased. At the same time, changes in plant distribution included the introduction and spread of some productive desert plants, including mesquite. Today, the major animal resources of the Mojave Desert are the same species that were present 10,000 years ago, but much more restricted in number and distribution. These are: (1) artiodactyls, including mountain sheep, antelope, and deer; (2) small mammals, consisting of rabbits, hares, ground squirrels, and other rodents; and (3) reptiles, lizards, tortoises, and snakes.

The artifact assemblage of the early Holocene in the Mojave Desert consists primarily of leaf-shaped bifacial cores, percussion-flaked bifaces in various stages of production, and more finely made percussion-flaked projectile points and bifaces, including both leaf-shaped and stemmed forms. Common uniface tools take a variety of forms, and some were probably used in processing artiodactyls and small animals. Manos and millingstones are present early, but in small numbers.

The reduced numbers of artiodactyls must have concerned the hunters, primarily interested in making hunting productive. They did not shift their focus to another strategy. Rather, they attempted to achieve success by improving the technology, tactics, and organization of the hunt. Although they did not succeed in increasing productivity until after 5,000 years ago, they did improve hunting technology with a permanent, revolutionary change. The points became shouldered and stemmed with incipient-to-moderate shoulder barbs, designed to stay in the animal once the point had penetrated the hide. These attributes were characteristic of most projectile points until after the introduction of the bow and arrow around A.D. 400–500. Significantly, artiodactyl hunting remained highly ranked and important, even though productivity declined. The changes reflected in projectile points also underscore how successful the men of the hunting strategy were at innovating and inventing.

While the hunting strategy of the men yielded less, the collecting and processing of seeds, the sphere of women, became more productive. While the men focused on improving the technology to take a dwindling resource, women intensified their seed collecting and increased their harvest. For the women, seed collecting and processing became an intense subsistence focus. New resources were added and new means of procurement and processing of these resources were adopted as new strategies or as variants of existing strategies. The resources and processes of the seed collecting strategy became more highly varied. As a result of focusing within the strategy, a greater number of resources was taken and a greater number of environmental zones utilized as collecting and processing technology changed and improved.

The experts who devised and developed these new resources and processes were the women, who constituted the personnel of the seed collecting/processing strategy. They knew the problems and how to address them. They played with ideas and developed the tools of the seed collecting strategy. As members of this subsistence focus, the women were the

☞ *WARREN, continued on page 30*

QUARRY PITS AND HEARTH FIRES

BALANCING WORK AND FAMILY IN THE GREAT BASIN

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Some years ago, I joined colleagues from Intermountain Research (IMR), a Nevada cultural resource management firm, to conduct a multidimensional study[1] of the immensely complex archaeological region known as the Tosawihi Quarries (26Ek3032), in north-central Nevada (Figure 1). Lying north of the Humboldt River and approximately sixty kilometers northeast of Battle Mountain, Nevada, the Tosawihi Quarries represent the largest, most intensively exploited prehistoric opalite (white chert) sources identified in the Great Basin (Elston 2006).

The Tosawihi landscape is dominated by the remnants of 10,000 years of opalite procurement and lithic processing activities. Prehistoric quarry pits, battered ledges of exposed opalite, hundreds of lithic reduction scatters, and fields of biface reduction debris litter the ground for several thousand acres, encompassing numerous sites and localities (Figure 2). The Quarries have yielded far more than the largely redundant, monotonous assemblages of lithic procurement, however. Abundant evidence of tool manufacturing activities, special task localities and food processing—domestic assemblages suggested by milling equipment, ceramics, and hearths—has also been recovered. Were these domestic loci directly affiliated with the use of the Quarries for the extraction of toolstone? What might such evidence suggest about gender roles and arrangements in foraging groups using the Quarries over the millennia?

Gender Roles and the Western Shoshone Ethnographic Record

The Quarries figure importantly in the recent ethnographic record of the north-central Great Basin. Julian Steward reported that the *Tosawi* (*tosa*, white; *wi*, knife), a group of Western Shoshone living near Battle Mountain, exploited the region to the north of the Humboldt River for "a high quality of white flint for knives" (1938:162).[2] The *Tosawi*, or White Knife Shoshone, appear to have shared significant resource zones, as well as important social interactions, with their neighbors to the west, the Northern Paiute (Harris 1940). As there was little or no territorial defense of resources, multiple foraging groups might have nurtured long-distance social relationships to maintain access to the Quarries.

After wintering along the banks of the Humboldt in groups of three-to-five related families, *Tosawi* bands fragmented into discrete, single-family foraging units, ranging 25–100 miles from the winter camp. The gathering of wild plants (chiefly grass seeds and roots) and the hunting of rabbits, antelope, deer, and mountain sheep occupied individual families or occasional cooperative hunting or collecting parties. Families might have traveled as far north as the Owyhee River for salmon or as far south as Austin (some 80 miles) for pine nuts, which they transported back to their winter encampment (Steward 1938:162). The spring, summer, and fall foraging round might well have brought the *Tosawi* within close proximity of the Quarries. Yet visits of any length must have been constrained by season and availability of labor, water, and food. The Tosawihi region is dry, supporting but a few seasonal springs and ephemeral drainages. Plant resources are not abundant, and animals are limited to occasional medium-sized game (mule deer and antelope, bighorn sheep) and small mammals (gophers, squirrels, marmots, wood rats, and rabbits, for example). Overall, the resource picture at Tosawihi Quarries is one of relative scarcity. Nonetheless, game and plant foods (e.g., bitterroot, gooseberry, chokecherry, Great Basin Wild Rye, rice grass) might *just* have adequately supported small foraging groups who moved through the area (see Elston 2006).

In general terms, the Western Shoshone economic system, in which the *Tosawi* participated, was structured around the family as a self-sufficient economic unit, and gender roles, at least as observed by ethnographers, were largely defined on the basis of sex. As Steward (1938:44) remarked, "sexual division of labor covered all essential pursuits." Women did all the food preparation, manufacturing of pottery and basketry, and seed gathering. Men helped gather pine nuts on occa-

Figure 1. Map of Tosawihi Quarries in the Great Basin (Intermountain Research).

sion, produced stone tools and conducted all big game hunting; both men and women participated in fishing, and communal antelope and rabbit drives. Each sex made its own implements, while men and women assisted each other in hunting small mammals, building houses, transporting wood, water, seeds, and raw materials for making baskets, pots, and metates.

On the question of lithic procurement activities and gender organization at Tosawihi Quarries, however, the local ethnographic record stands mute. Virtually nothing is reported about the way that groups organized themselves for the work of quarrying. While we do know that women were present in the foraging groups that traveled near the Quarries, we have no ethnographic information about their participation in the acquisition of toolstone there. Did they share, with men, the work of toolstone procurement? Did they participate in the lithic production activities that are so well documented in the archaeological record at Tosawihi?

Gender Roles in the Ethnographic Record of Quarrying

Other ethnographic cases provide some clues about variable gender roles in traditional lithic procurement systems. In

Figure 2. Opalite quarry pit and reduction debris at Tosawihi Quarries.

the Great Lakes area, Luedtke (1984:74–75) reports that women used knives, scrapers, and choppers in their daily activities, and probably participated in the collection of toolstone as well. Visits to high-quality stone quarries and casual collection of surface cobbles from gravel banks were embedded in other foraging activities. Such embedded activities limited the quantity of material that could be quarried; still, they yielded enough for the families' annual needs, about 50 kg of stone.

Among the mobile Western Desert Ngatatjara Aborigines of Australia, lithic production was largely a gender-differentiated activity: men traveled to quarries, women stayed home (Gould and Saggers 1985:120). Women sometimes made and used lithic scrapers and flake knives, and would occasionally collect stone flakes, when encountered, while foraging. Yet the household was largely dependent upon males to supply quarried lithic materials, and only they would make targeted trips to obtain raw material (Gould 1977). The choice of a particular lithic source was conditioned by proximity to the residential site occupied at the time of the foray. In central Australia, Alyawara men exclusively were expected to collect and/or quarry lithic material (Binford and O'Connell 1984:409). In the Northern Territory, younger Yolngu men were called on to dig quarry pits, older men were responsible for core and primary flake reduction, and women were responsible for transporting material (Jones and White 1988:61–62).

Extreme sexual segregation of quarrying work was reported by elder men of the Tungei, in the Papua New Guinea highlands (Burton 1984). Territorial clans owned and exploited named clusters of quarry pits on their land. At intervals of several years, quarrying and axe-making expeditions were

Figure 3. Quarrying experiments (with fire, hammerstones, and antler tools) at Tosawihi Quarries (Melinda Leach).

mounted, featuring up to several hundred men and adolescent youths from the clan groups. The men moved to special camps at the quarry pits, sometimes as far as 5–7 km away from their residential base, where they might have remained for as long as three to five months. There they built men's houses, worked cooperatively to clear the old pits and expose new axe stone, and produce axe blanks and roughouts. According to Burton (1984:240), "quarrying was perceived [by the Tungei] to be dangerous and, as in warfare and other hazardous activities, the main theme of the quarrymen's beliefs was segregation from women and all 'female' things." Procedures of female avoidance and diet restrictions were called into play during quarrying activities. Women made daily trips to the camp to provide food. At the end of the quarrying expedition, women made one last visit where they stormed the camp, beat the men with sticks, burned the men's houses, drove away "spirit-sisters" with whom the men had been "cohabiting," and held a celebratory pig kill. Afterwards, the women gathered the axe blanks and rough blocks in net bags and returned, with the men, to the homestead (Burton 1984:242). Thus, while Tungei women were excluded from the *work* of quarrying, their roles in subsistence support, spiritual identification with the work and its products, and material transport were substantial.

Gender and the Organization of Toolstone Procurement as Tosawihi

The specific lithic procurement strategies employed at Tosawihi certainly would have varied over time in response to costs and risks of procurement related to environment, social relations, subsistence and labor constraints, and regional toolstone demand (see Elston 2006). Tosawihi quarriers might have embedded their quarrying activities in routine foraging forays, opportunistically acquiring toolstone, or they might have planned diurnal family outings to the Quarries from a nearby camp. Alternatively, they might have altered substantially their scheduling and group mobility to incorporate planned logistical or residential moves to the vicinity of toolstone features. They might also have changed the composition and size of task groups, varied their procurement techniques (extraction and processing), affected social networks to gain access to quarries through trade and social relations—all in order to ease the variable costs of lithic procurement and transport of toolstone (Elston 2006; Leach 2006).

Certainly, any of these mutable arrangements would have involved shifts in the organization of gender and the designation of gender roles and relations—who performed specific tasks, where and when they were performed, in what social contexts, who made decisions, how were actions and interactions managed—might well have varied as men, women, elders, and children took on different activities and obligations in the work of quarrying or in the logistical and subsistence support of those who quarried. Indeed, gender organization would have been critical to the lithic production system as a whole, as men and women negotiated the planning, scale, scheduling, and logistics of toolstone acquisition forays, especially where such forays might have competed with other foraging or social activities.

So who staffed, fed, and otherwise supported quarrying work groups? How might women's participation and decisions about foraging have affected the timing of either residential or logistical moves to the Quarries? If women were present at Tosawihi, if indeed they participated in toolstone extraction and lithic production among other demands on their

time, what would we expect to see in the archaeological record that might reflect their presence and reveal variability in their activities?

Quarrying Experiments at Tosawihi. Actualistic experiments at Tosawihi, including participants of both sexes, were conducted to model the time and energy required to extract opalite from the ground (Carambelas and Raven 1991). Defying initial assumptions, these experiments demonstrated that brute strength alone was not sufficient for the task. Subtle strategies of fire use to craze the opalite veins, and use of small hammerstones and antler wedges produced large blocks of useable material.

That a modern female quarrier was able to extract significant useable material demonstrated that it was both feasible, *and profitable*, for prehistoric women to have participated in the actual work of quarrying. With adequate body strength, with a vested interest in the quantity and quality of the material collected at Tosawihi (women, after all, were almost certainly consumers of that toolstone), and with a noticeable input into the efficiency of toolstone acquisition, it is conceivable that women, and even children, fulfilled multiple roles in the quarrying labor force as material assayers, collectors, excavators, flintknappers, and transporters.

The Archaeological Evidence at Tosawihi Quarries. More than 90 sites were excavated, at various levels of testing and data recovery intensity, at Tosawihi (see Elston 2006). The variable occurrence of features, functional classes of tools, and facilities suggested that there had been at least three classes of sites in the Tosawihi procurement system. Quarrying locations, lithic reduction locations, and residential locales were identified by the presence/absence of: (1) on-site lithic sources, quarrying and/or reduction features; (2) facilities or features such as hearths, ash stains, and fire-cracked rock accumulations; and (3) diverse functional tool categories—domestic food processing, preparation and storage equipment (such as millingstones and pottery), weapons, general utility tools, quarrying equipment, and fabricating/processing tools and their by-products (Leach 2006).

Quarrying locations, supporting natural toolstone deposits and lithic extraction features, include cobble deposits, outcrop quarries, and quarry pits—some ranging in scale from massive, 4 m-deep deposits of opalite quarrying debris to shallow depressions. Reduction locations are the archaeological remains of lithic (usually biface) reduction episodes, ranging from small, discrete, shallow scatters of debitage representing single reduction events to large, multi-feature complexes.

Two dimensions of residentiality were identified at Tosawihi: the ephemeral domestic sites at or near toolstone sources (domestic quarries), and the more visible and repetitive occupations at off-quarry locales favorably located near water and food resource patches (domestic reduction sites). Residential locales at Tosawihi are distinguished by the residues of opalite tool production, tool maintenance, *and* food processing. They occasionally contain hearths or ashy concentrations (Figure 4), multiple tool maintenance and reduction features, preserved subsistence remains, occasional ceramic vessel fragments, and sometimes relatively large quantities of plant processing equipment (millingstones).

Residential locales sometimes exhibit the structured (task-differentiated) use of domestic space, as well as distinctive assemblage profiles. One site, for example, hosted a central boulder that served as a long-term focal point for various activities, resulting in some 24 overlapping features; another site contained multiple, functionally differentiated surface reduction features. All residential locales exhibit a suite of tools that infers a broad repertoire of domestic routines: tool and weapon maintenance, rejuvenation and "gearing-up" (the presence of preforms along with projectile points), expedient resource processing with flake tools, late stage bifaces, as well as bone tool and general utility tool usage (Elston 2006).

This broad domestic repertoire is accompanied by evidence of far-ranging territorial mobility as well. Residential assemblages are far more likely to contain exotic raw materials: 92 percent manifest multiple raw materials (including obsidian, basalt, and other materials), compared to only 36 percent of the nonresidential assemblages. Even more striking is the distribution of obsidian across residential and nonresidential locales. Imported to the Quarries from substantial distances across Nevada, Idaho, and elsewhere, obsidian arrived from a broad territory well beyond the boundaries of the Tosawihi vicinity. Of 20 obsidian sources chemically identified in the assemblages across all sites at Tosawihi, residential localities reflect 80 percent (16) of the obsidian source variation.

Thus, the locations of domestic activity suggest that people, perhaps representing multiple genders and variable residential or task groups, were arriving at the Quarries from disparate territories and sometimes lingering there long enough to set up temporary households, conduct tool-maintenance, and to require local subsistence support. In the process, they were leaving behind tool assemblages that were distinctively different from those found at the many narrow quarrying or reduction localities.

Figure 4. Hearth feature at Tosawihi Quarries.

Discussion

Flexible, gendered organization of labor, probable variation in mobility and residential patterns, and the social context of toolstone procurement may have been critical to the Tosawihi lithic procurement and production system. The archaeological record of the Quarries suggests that such flexibility may have been accomplished, in part, by occasionally restructuring, or segmenting, the labor force so that only a few individuals or task groups were removed from critical foraging opportunities (Elston 2006). Group organization and individual duties could have been renegotiated as needed.

How was this restructuring realized at Tosawihi? In the case of domestic quarries, mixed-gender, short-term residences or logistical camps were established directly on the toolstone source, where material was quarried and bifaces were prepared for transport. Placing a camp on a toolstone source represents a highly efficient strategy when time spent at the Quarries can or must be minimized. Employing this strategy, time spent at the Quarries was brief; few food supplies were required and could simply have been packed in. Task groups or opportunistic family parties need not have invested substantial time maintaining themselves or their domestic toolkits while there.

For longer-term stays at the Quarries, however, such a strategy was exceedingly risky and costly, given the limited availability and spatial structure of food resources there. Opportunity costs while camping on a toolstone source would have increased significantly as task groups lingered (Elston 2006). The longer the stay, the greater is the risk of becoming isolated from other life-supporting resources. When energy and time spent at Tosawihi were extended (possibly by high toolstone demand, encumbering social interactions, decreased access to other toolstone sources, or constrained territorial movements), it would have paid to adopt a different residential strategy. Longer-term, mixed-gender residential bases (domestic reduction sites) were established in the vicinity but just off of the Quarries, probably during food-rich seasons, such as spring and early summer.

An entire relocated residential group (comprised of women, men, elders, and children) could have engaged in intensive, full-scale quarrying as one activity among numerous other domestic routines. Lithic cores and early-stage bifaces were transported from the Quarries to the affiliated residential camp where they subsequently were prepared for further transport. The extended residential stay in the Tosawihi vicinity and the disjunct nature of support resources required strategic positioning of residence and task groups with regard to both food and toolstone patches. At such

favorable locations, several economic advantages converged—comfortable resting spots for toolstone reduction, reliable sources of hammerstones, predictable root crops, access to game watering areas, etc. On occasion, quarrying was undertaken diurnally by part of the residential group, while others were foraging for food to support an extended stay.

Who should have comprised that support staff? Optimal foraging models (see Elston and Zeanah 2002; Simms 1987) suggest that high-ranked, big game would be the most cost-efficient resource to sustain hard-working quarriers. Given the high caloric demands of quarrying, and the relative caloric returns of meat and plant products, it would always have been meat that was the favored item in the diet *when game was available*. Thus, whenever big game was reliably present, hunting (deer, antelope) should have been the favored support activity, followed long-after by the capturing of small mammals, the collection of roots, and then, the harvesting of seeds. Support personnel (probably male hunters) should have gone after high-ranked big game while a smaller work force, consisting of women, children, and elders continued quarrying. In the absence of big game (for example, later in the season when game was scarce), women, less-productive men, and children should have been relieved of quarrying duties to forage for small mammals and roots. Thus, relative individual productivity, and the efficiency with which available resources could be procured, would have predicted which kinds of foragers (vis-à-vis gender, age, etc.) would be redirected from quarrying to subsistence pursuits.

Thus, gender roles and group organization at Tosawihi Quarries were likely to have varied situationally, yielding at times logistical, short-term and longer-term residential options. Indeed, flexibility in these arenas, involving shifts in gender roles, mobility, and residential patterns designed to maximize procurement efficiency may have been the hallmark of lithic production systems at Tosawihi Quarries over the millennia.

At Tosawihi, we can see women's behavior as central: what women decided and how they actively participated had long-term impacts on how the problem of getting toolstone was resolved. Quarrying decisions and behavior were powerfully affected by whether women were present or not—where, when, and how quarrying was accomplished depended on the full participation and collaboration of women, even if/when they were not physically present at the Quarries. The requirements of quarrying at Tosawihi would have compelled men and women and even children to negotiate and integrate actions and decisions—what were the rules and implications of participating in quarrying? What redefinition of personnel, scheduling, and decision-making had to have taken place? What social negotiation, in order to work out conflicts and compromises, had to occur again and again before such participation could happen:

> When do we go? How many of us should make the journey? Where do we camp? How long should we stay there? How do we sustain our families while we're there? What activities do we forsake for the benefits of procuring toolstone? What are the pay-offs, and are they sufficient for the whole residential group to go there? What's in it for all of us?

As today, a balance between work and family, roles and responsibilities, had to be negotiated with every task. And, perhaps, women's work was particularly valued at this time for the critical toolstone resupply it made possible.

Acknowledgments. I wish to acknowledge Intermountain Research colleagues Kathryn Ataman, Bill Bloomer, the late Steve Botkin, Cashion Callaway, Kris Carambelas, Mike Drews, Dan Dugas, Robert Elston, Eric Ingbar, the late Christopher Raven, Shelly Raven, and Dave Schmitt for countless hours of enlightening conversation and camaraderie. Many of the ideas contained herein were developed through the collaborative teamwork of these archaeologists. Elston and Christopher Raven, principal investigators of the Tosawihi Quarries project, were particularly responsible for the economic and geographic modeling. Certainly, they cannot be held accountable for how I have used their ideas. I only hope my reframing of these ideas in a more explicitly gendered context gives them new life. Robert Lee, University of North Dakota, was indispensable in the editing process. Thank you, all.

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Notes

1.In response to potential minerals development projects, Intermountain Research undertook archaeological survey, testing (of 67 sites) and data recovery (at 25 of those tested sites) at Tosawihi Quarries between 1987 and 1989. This multiyear project generated multiple analytical reports and monograph chapters by myself and my colleagues, Kathryn Ataman, Bill Bloomer, the late Steve Botkin, Cashion Callaway, Kris Carambelas, Mike Drews, Dan Dugas, Robert Elston, Eric Ingbar, the late Christopher Raven, Shelly Raven, and Dave Schmitt. Our ideas and analyses, briefly summarized here, are fully elaborated in Elston (2006).

2.In the late 1980s, Clemmer (1991:3) found a significant number of people in the Duck Valley region still identifying themselves as *Tosawihi* ("White Chert Carriers"). In the 1990s, Shoshone who visited the Quarries recounted powerful memories of visiting the place with elders in the context of spiritual activities, foraging and toolstone collecting (personal field notes, 1991).

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innovators and inventors. Regardless of the gender of the personnel of a subsistence strategy or of any other cultural group, the focusing process functions in the same way. Just like men, women work together, innovate and invent as they pursue those activities where they share interests, and interact intellectually with others.

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FOUNDING "MOTHERS" OF THE SOCIETY FOR AMERICAN ARCHAEOLOGY

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The story begins with the first concrete action on the idea of forming a national association for Americanist archaeology. The Committee of State Archaeological Surveys (CSAS), of the National Research Council, coordinated the information for the various state archaeological societies in the 1920s and early 1930s, but did not provide a venue for the local societies to meet on any regular basis and not all states were represented by state archaeological societies. The CSAS board members and some other interested archaeologists met in Columbus, Ohio, in the last week of December 1933, during the annual American Anthropological Association meetings, and acting on a suggestion of a member, decided to investigate forming a national-level organization composed of professional and amateur archaeologists (Guthe 1935:142). Carl E. Guthe, as CSAS chairman, agreed to oversee the project, and in the spring of 1934, he sent out a prospectus detailing the suggested national society to list of about 200 people presumed to be interested. The prospectus was revised in light of suggestions received from that mailing. Guthe presented the revised prospectus at the annual meeting of the CSAS in Indianapolis on May 10, 1934. It was accepted, and the group agreed to have an election by mail for a committee to draw up the constitution, bylaws, and articles of incorporation for a national organization (Griffin 1985:263).

In the fall of 1934, a ballot was sent out to the individuals on the mailing lists, and a special subcommittee of Alfred V. Kidder, Alfred L. Kroeber, and Frank H. H. Roberts, Jr., was elected to do this task. The constitution and by-laws they created were then mailed out in time for consideration for a December meeting (Guthe 1935:142). A nominating committee of Fay-Cooper Cole, Carl E. Guthe, Albert E. Jenks, and Ralph Linton drew up a slate of four officers: Arthur C. Parker, President; Mark R. Harrington, Vice-President; Carl E. Guthe, Secretary-Treasurer; and William C. McKern, Editor; and eight council members: Emerson F. Greenman, Emil W. Haury, Diamond Jenness, Frank H. H. Roberts, Jr., Leslie Spier, W. Duncan Strong, George C. Valliant, and William S. Webb.

The organizational meeting was held the evening of December 28, 1934, following the annual meeting of Section H (Anthropology) of the American Association for the Advancement of Science (AAAS) in Pittsburgh. As an aside, because so few archaeologists today participate in Section H of the AAAS, a note on its importance is in order. In the early part of the twentieth century it was one of the principal locales where archaeologists congregated to share information and present papers; it was of course the locale from which much of the origin of the American Anthropological Association was generated as well. Hence it was the logical organizational setting for such a meeting.

Thirty-one people approved and signed the constitution and bylaws that evening, and accepted the nomination slate. The SAA grew much more rapidly than the founders had anticipated. By the time of the first annual meeting of the SAA, December 28, 1935, 348 members had joined the nascent society (Guthe 1936:311). We might note that Guthe (1967:438) reported three decades later that there were 446 members at the end of the first year, but this discrepancy seems due to the fact that the SAA decided that first year to change the beginning of their fiscal year from January 1 to July 1, so Guthe's 1967 count appears to include 18 months instead of 12. By the end of the second year, at a summing on December 10, 1936, there were 574 members (Guthe 1937:292).

Of the original 31 signers of the documents in December 1934, there were 25 men and 6 women. For the 50th anniversary of the SAA, one of the original signers, James B. Griffin, wrote a retrospective, and in a table, identified the 31 signers by short notes on their profession at time of signing. For the women, he (Griffin 1967:266–267) listed: Emma Reh (U.S. Soil Conservation Service), Helen H. Roberts (research assistant at Yale), Dorothy L. Schulte (secretary, CSAS), Ellen S. Spinden (wife of Herbert J. Spinden, one of the 25 men), Sallie Wagner (student), and Gene Weltfish (ethnologist at Columbia). I suspect that most of our readers do not recognize these names, and looking over the professions listed, they seem like a motley group. But they were much more involved in archaeology than it appears from Griffin's parsing of their professions.

Ellen Sewall Collier [Spinden] (1897–1985) graduated with "special distinction in history" from Radcliffe College in 1919. It was not possible for Radcliffe students to major in anthropology until 1925. In 1927, she entered graduate school at Radcliffe, and was awarded a fellowship to study archaeology. She studied Maya archaeology at the Peabody Museum with Alfred Tozzer. In the fall of 1928, Ellen Collier married Herbert Joseph Spinden, a well-known Mayanist archaeologist, whose base of operations in Cambridge was the Carnegie Institution of Washington (CIW) archaeological headquarters, immediately adjacent to the Peabody Museum. Ellen completed her A.M. in Mesoamerican archaeology in 1929, and then found work on the Brooklyn Museum's staff, where her husband had just taken a job as well. In 1930, she was elected to the AAA Executive Council for a three-year term (1930–1933).

In 1929, and 1931, Ellen and her husband made extended research visits to the Totonac site of El Tajin. Ellen Spinden wrote up and published this research, which was the definitive study in English on this site for many years. She also participated in the excavations with her husband on various CIW Maya projects in 1934, 1935, and 1936. Thus in December 1934, she was much more than just "Spinden's wife"; she had an A.M. degree in Mayan archaeology, had Mesoamerican publications and research to her credit, and was actively involved in the CIW Mayan excavations. Why isn't her name more known? In 1938, the Spindens divorced; it was a difficult divorce and the CIW severed all ties with Ellen. As a Mayan specialist, there were no other jobs in the field available to her, so like many of our colleagues in the economy today, she went back to school to learn another job skill, and changed careers.

Sarah (Sallie) R. Wagner [Lippincott] (1913–2006) started out as an amateur archaeologist, collecting stone tools from a site on the farm where she was born in West Virginia. By the age of 14, she had talked her father into having his firm pay for a 'dig' on some mounds that the company owned along the Ohio River. The excavation was run by the University of Pennsylvania museum, and she talked her way on to the project. In addition to training her in excavation techniques, the students there suggested that she go to the University of Chicago and study with Fay-Cooper Cole. Wagner also persuaded her family to take their vacations in the Southwest for several years, so she could learn the local archaeology. Sallie entered the University of Chicago in 1932, and graduated with an A.B. in anthropology in 1936. So yes, she was only a "student" in December 1934, but she had already spent nearly a decade avidly pursuing archaeological topics.

While participating on summer excavation training digs in the Southwest, Sallie met her husband, William J. Lippincott, who was working on his A.M. at Chicago, and they married in 1936. After working for the National Park Service at Canyon de Chelly from 1936 to 1938, Bill quit and the two of them bought Wide Ruins, a Navajo trading post. Bill and Sallie ran Wide Ruins until 1950, when he became the assistant director of the Museum of International Folk Art in Santa Fe. Sallie became reintegrated into the archaeological community at that point, but primarily through her involvement serving on executive boards for the School of American Research in Santa Fe from 1974 to 1994.

Helen Heffron Roberts (1888–1985) had started out studying music, but because of her health, she spent many years in the Southwest. While there, she became interested in archaeology, and worked as a volunteer in 1913–1914 with A. V. Kidder. She continued this interest in archaeology later. For example, she spent a season excavating in France with the American School of Prehistoric Research in 1928. At Kidder's suggestion, Roberts entered Columbia University in 1916 to do graduate work, and completed her A.M. there in 1919 on Northwest Coast basketry technology. While she continued her interests in archaeology and basketry technology, she returned to her original interest, music, and began doing ethnomusicological research among North American Indian groups. Roberts thus had been involved for two decades in archaeological and anthropological activities by the 1934 meeting. From 1924 to 1936, she had funding support as a research associate at Yale, but the position was terminated in 1936 when "soft money" from the Rockefeller Foundation was cut back. She found a temporary position for the next few years, but frustrated with the lack of support, then left her anthropological research, and became a nationally known gardening specialist.

Emma L. Reh [Stevenson] (1896–1982) received her A.B. in journalism from George Washington University in 1917. She worked as a chemist for the U.S. Department of Agriculture for three years before joining the Science Service as a writer in 1924. She resigned from the Science Service in 1926, and later that year moved to Mexico. There she remained a regular Science Service correspondent, submitting more than 50 articles and accompanying photographs between 1926 and 1935, mainly related to archaeology, and including several reports on the Monte Alban, Maya, Mixtec, Teotihuacan, Totonac, and Aztec prehistoric cultures.

Although most of Reh's archaeological writing was based on reporting on the excavations of other archaeologists, she did get involved in some actual fieldwork, joining a Yucatan-British Honduras-Chiapas expedition in 1933. Returning to live in the U.S. in 1935, she continued more anthropological field work for the U.S. Soil Conservation Service (SCS), addressing food consumption and related nutritional problems with the Navaho and various other Indian groups. In 1946 she left SCS and joined the Food and Agriculture Organization of the United Nations, doing similar nutritional studies in Latin America. While her actual archaeological fieldwork was minimal, she was an impor-

tant promoter of Americanist archaeology in several scientific venues during the 1920s and 1930s.

(Regina) Gene Weltfish [Lesser] (1902–1980) obtained her A.B. in 1925 from Barnard College. Also in 1925, she met Alexander Lesser, another student of Boas; they married that year. Weltfish then entered the graduate program in anthropology at Columbia. In the summer of 1928, Weltfish and Lesser went to Oklahoma to begin dissertation fieldwork in linguistic and kinship studies among the Pawnee. While she completed and defended her dissertation at Columbia in 1929, she did not receive her degree officially until 1950 because she could not afford the $4,000 it would have cost her to publish her dissertation, then a requirement to receive the Ph.D. When Columbia changed its policy and began accepting less expensive mimeographed versions in 1950, Weltfish finally was able to turn in her dissertation and received her degree.

In 1930, Weltfish received a Social Science Research Fellowship, allowing her to live with various Southwest Indian groups for a few years; during this time she became interested in the local archaeology, and archaeologists. In 1935, Gene Weltfish was invited to teach in the graduate program at Columbia, and as a lecturer started teaching classes in archaeology, technology, and linguistics. In 1952, she charged that the United States was using chemical weapons in the Korean War. Joseph McCarthy's Senate Internal Security Subcommittee subpoenaed her, accusing her of being a communist. This precipitated a bitter battle between Weltfish and Columbia's trustees, and Weltfish was told her contract as lecturer would not be renewed in 1953—she was still an untenured lecturer after teaching two decades at Columbia because she had not been able to obtain a tenured position owing to the delay in being award her Ph.D. for 21 years. After leaving Columbia, Weltfish taught at several Midwest universities until her death. She is an excellent example of the kind of treatment that women in academia were being subjected to at this period.

Dorothy L. [Mrs. R. C. Schulte] was Carl E. Guthe's secretary on the National Research Council's Committee on State Archaeological Surveys, from 1927 until it was terminated in the mid-1930s, resigning her position with them in 1935. She then became secretary of the University Museum at Michigan, and in that position, she assisted William C. McKern as editor of the first three years of *American Antiquity*, helping with editing and other publishing responsibilities of the journal for Volumes 1, 2 and 3 (1935 to 1938). She resigned her position with the museum in 1938, but stayed around for a few years, as at least one graduate student in the late 1930s tendered thanks to her for typing his dissertation manuscript.

All six of these women were thus considerably more involved in archaeology, even to the point of one of them being a professional archaeologist, than the 50th anniversary summary led us to believe. The "founding mothers" were every bit as important and qualified as the "founding fathers" of our society.

Author's Note: The information on the women in these articles is derived from a book I am currently preparing, titled "*Cultural Negotiations: Women who aided in the founding of Americanist Archaeology.*"

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ARTICLE

NOVELS OF CAHOKIA

John C. Whittaker

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Novels about the prehistoric past are popular these days, and some have achieved blockbuster success in the last couple of decades. The attraction of any novel is in a well-told story that deals with human issues, often moral concerns of contemporary society. All novels must also create an imaginative world that is in some way consistent and convincing, whether their story takes place in a re-created past, an imaginary future, or a fictionalized contemporary setting. The archaeological novel has an added burden. It attempts to re-create a world that no longer exists, but for which there is evidence, and at least some readers will compare the novelist's vision to the evidence, and to the reader's own preconceptions, which also come partly from archaeological evidence. Of course scientific archaeology is engaged in a similar attempt to re-create a realistic and consistent past, but the novelist's imaginary characters and events go further from the evidence than we archaeologists usually dare in our "interpretations." Archaeological interpretations are equally imagined views of the past, but usually in the form of generalizations about social structure, subsistence, and cultural processes, rather than people and stories.

I enjoy using novels in teaching my archaeology classes, partly to make this point that our scientific views of the past are also interpretive and imaginative. Beyond that, writing a fictional narrative set in the past, or critiquing someone else's attempt, is an excellent exercise in scientific archaeology. To produce a vivid, fleshed-out, human picture of the past, you need lots of details, and these require you to answer questions that are fundamentally based in archaeological evidence. What was your heroine preparing over the fire? What was the fuel? Is the food in a pot or on a spit or griddle? Having your Neanderthals prepare gourmet feasts or your Neolithic Europeans cook potatoes is a jarring transgression of fact that undercuts the informed reader's belief in a story and trust in a novelist.

A novel is also a study in emotion and symbolism. How did our heroine feel about the food, about cooking? In all cultures, people have strong feelings about what they eat, so what you put in her pot can be used to illuminate her and her world. Was she happy to be cooking, or is the kitchen a symbol of drudgery and oppression? Does the food taste good or is it merely sustenance? Was it fun and exciting to obtain it, or painful and dangerous? This kind of imagining leads not only to good writing, but also to good archaeology. If our imaginary heroine eats maize every day, as the archaeological record that you are following suggests, we modern Americans would probably think that pretty poor fare. Might there be evidence that your heroine's culture attempted to enliven maize gruels with spices, or prepared corn in more interesting forms? A number of well-known archaeological studies have used the rhetorical device of a piece of fiction to make these points (Kamp 1998; Spector 1993).

Cahokia is one of the great archaeological sites of North America. It has a long history of archaeological investigations, and some of the current studies related to Cahokia are among the most interesting archaeological work in recent American archaeology. The SAA annual meeting in 2010 will be in St. Louis, close to Cahokia Mounds World Heritage Site, with its massive earthen mounds in a park setting close to the city, and an excellent interpretive center. Cahokia must figure in any course on North American prehistory, and I like to pair a novel about Cahokia with a readable archaeological account like that by Young and Fowler (2000). I have found three enjoyable novels about Cahokia; all of them are in paperback and have been at one time or another on sale in the Interpretive Center gift shop. All attempt a richly detailed archaeological reconstruction, and all of them deal with more dramatic moral issues that strike us as interesting and problematic features of the Mississippian world, partly because they are relevant to concerns of our own society. The novels are *Cricket Sings* (King 1983), *Journey to the Sun* (Schusky 2001), and *People of the River* (Gear and Gear 1992).

I like *Cricket Sings* because the story focuses not on fierce warriors, mighty chiefs, and great events, but the life of an ordinary woman, the kind of person represented by the vast majority of the archaeological record. Cricket Sings is an elderly widow at the low end of the upper classes. Her storytelling and herbal skills expose her and the reader to a wide circle of acquaintances, as she copes with the ordinary difficulties of family and friends, and the more painful uncertainties of life in a society controlled by a powerful and not always benevolent class of priestly nobility. King makes good use of her heroine's story-

telling to create a reasonably consistent religious worldview, and ties the symbolism to the themes of the story. The archaeological details are not dwelt upon, but are used carefully and more realistically than in most novels of prehistory. Reading a novel leads students to consider evidence and the author's biases: in *Cricket Sings*, the economy is portrayed as rather capitalistic, with a market apparently peopled by small shopkeepers and customers. For instance, Cricket Sings buys a corn cake, and pays with a small amount of herbal tea. Is this kind of market transaction what we should expect, what can you use as low-value media of exchange, and what kind of containers are necessary to distribute little bits of perishable goods? Nevertheless, I find that when I try to picture living at Cahokia, my imaginings are closest to the picture presented by King.

The central figure in *Journey to the Sun* is also a woman, a Shoshonean hunter-gatherer from the Great Basin who arrives at Cahokia through a series of misfortunes and a gift for learning languages. At Cahokia, she becomes the "servant wife" of a high-ranked noble. This involves her in palace intrigues and the machinations of an unpleasant co-wife. Her language skills mean that she accompanies expeditions to Spiro and the western tribes, and eventually finds true love with another foreigner and escapes from an increasingly dangerous Cahokia. Schusky's writing and plotting are less skillful than the other two novels, although perfectly readable. Importantly, he reminds us that the archaeological record of exotic goods spread over the continent implies a lot of personal mobility and travel, which surely involved cross-cultural marriages and diplomacy. This is a more complex and cosmopolitan view of prehistoric life than most novelists or archaeologists imagine, but arguably close to the mark in many ways.

The Gears are among the best known and most prolific of archaeological novelists. As they have a background in professional archaeology, they bring an unusual realism to some of their stories, characteristically beginning each novel with a vignette of archaeological work and politics at the site where their prehistoric tale is set. *People of the River* is a good example of one of their many novels covering different places and times in North American prehistory. After so many novels, some aspects of plot and character reoccur. In *People of the River*, hard times have come to the great center of Cahokia, and the gods seem to have abandoned the people. The young hereditary leader, corrupt and increasingly insane, can only prop up his rule and support his community by forcibly taking the tribute that surrounding villages used to give willingly. His leading warrior reluctantly follows orders to attack and plunder, and a desperate struggle begins, pitting Cahokia against the dispossessed leader of one of the subject towns and the powerful medicine woman Nightshade. This is an almost state-level Cahokia, with an emphasis on hierarchy, chains of command, power conflicts, and political issues. The Gears' vision follows one plausible interpretation of how Mississippian society was organized, although many scholars see it differently—a novel is a good way to explore the consequences of different theorists' opposed reconstructions.

There are some oddities to the Gears' story. Nightshade is a kidnapped Anasazi, introducing some southwestern themes that do not fit well with what we know of Cahokian religious iconography. When I mentioned this to the Gears, they replied that it reflected an archaeological question: why are there so few traceable artifacts from the Mississipians in the Southwest and vice-versa? The answer they suggest in their novels is that these cultures considered each other unclean and dangerous. The Gears also use a little too much magical stuff for my taste in their otherwise realistic stories. The excuse is that their characters would have believed such things, but feeling the vibrations of spiritual Power in magical objects and actually talking to the dead is New Age nonsense now and did not happen in the past either, no matter what people believed. I think writing as if it did is appropriate for science fiction, but diminishes a novel that otherwise tries to be realistic. That said, much of the Gears' vision of the past is vivid and based on archaeology or ethnology, they are skillful writers, and I find myself interested in the characters and story even after thinking "they've done some of this before." The Gears' novels have enjoyed (and deserved) popular success, and are thus easy to find in bookstores.

One archaeological aspect of Cahokia that attracts a lot of attention is the set of elaborate burials in Mound 72, where elite rulers were accompanied by many other individuals who appear to have been sacrifices. A display in the interpretive center presents a good example of a careful evidence-based reconstruction of this burial. Not only is this find archaeologically dramatic (and supported by other finds and ethnographic accounts), but the idea of sacrifice and the way it threatens individual characters and can be manipulated for political and personal ends serves as an important plot line in *Cricket Sings* and *Journey to the Sun*. Human sacrifice is a dark side of what we otherwise see as successful, even brilliant cultures. How do ordinary people make a good life in the shadow of evil, and how do civilizations survive such a taint? One of the strong points of *Cricket Sings* is that King presents the ambiguities of such a culture. The Mississippian religion that involves sacrifice (and in her story, cannibalism, for which there is less evidence), is seen as corruptible, but also satisfying. The heroine is a devout believer, but she fears and resists certain aspects of Cahokian religion, which is indeed the way many people relate to their religious authorities today and surely in the past as well.

The moral problem that interests the Gears is warfare and political conflict, which appears in nearly all their novels. The occasional savagery of prehistoric warfare is well-attested by archae-

THE "75 FOR THE 75TH" TASK FORCE

Joe Watkins

Joe Watkins is the Chair of the 75 for the 75th Task Force.

At the 2008 SAA annual meeting in Vancouver, the Board of Directors established the "Task Force on Native American Membership to work in conjunction with the Membership Development Committee for the purpose of insuring that there are at least 75 Native American members of SAA by the 75th Anniversary annual meeting." The "75 for the 75th Task Force" is composed of representatives from the Membership Development Committee, the Student Affairs Committee, the Committee on Native American Relations, the Native American Scholarships Committee, as well as several members at-large.

It is now March 2010 and the 75th Anniversary is nearly upon us. We call upon you to assist us with the Society's goals. The initial task is to identify who among us is of Native American ancestry. If you are, please update your demographic information on-line today (and check it periodically. I was quite surprised last year to find out that I was no longer Native American...). The second task is to bring in new members who would benefit from what the SAA offers. If you know Native American students, preservation specialists, or others who work with archaeology, please encourage them to become members. If they ask you "What's in it for me?" turn it back and ask them "How can the SAA have a strong Native American voice if there are so few to speak up?"

The objective is not simply numbers. We need to do more than talk about the lack of diversity. We need to increase diversity within the SAA membership and to examine what relevance the SAA, as North American archaeology's premier professional organization, has for Native American archaeologists. Help us brainstorm ideas that will aid the Society in accomplishing its goals. Feel free to contact me, or any other Task Force member. Help us check tasks one and two off our list.

WHITTAKER, from page 35 ↩

ological finds, contrary to some popular views that native peoples were harmonious and peaceful before Europeans disrupted traditional ways. How does a modern American understand and respect another culture, when there is plenty of evidence of actions that we consider repugnant? The Gears are remarkably good at portraying conflicted characters whose sometimes brutal actions are motivated by circumstances and beliefs that make them understandable and sympathetic. In so doing they explore common problems of the tragedy of human life and the struggle between good and evil in all of us.

Good archaeology, like a novel, tells a story, making the past live, but the "story" is more often just a description of a time and place, and perhaps some events and processes, and it must obey the evidence and not go too far beyond. In a good novel, the story leads the way, and the author's imagination fleshes out characters and details for which we can have no evidence. However, most successful novels set in prehistory have to be both a compelling imaginative narrative and a vivid picture of the past that sticks reasonably close to archaeological evidence. All three of these novels are enjoyable examples.

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ARTICLE

DIGITAL ANTIQUITY

TRANSFORMING ARCHAEOLOGICAL DATA INTO KNOWLEDGE

Francis P. McManamon and Keith W. Kintigh

Frank McManamon is Research Professor and Keith Kintigh is Professor in the School of Human Evolution and Social Change at Arizona State University.

Digital Antiquity (http://digitalantiquity.org) is a new organization dedicated to establishing an online digital repository of archaeological data and documents. Its primary goals are to expand dramatically access to the digital records of archaeological investigations and to ensure their long-term preservation. Through a web interface users worldwide will be able to discover and download data and documents relevant to their research. Users also will upload their own data and documents along with the metadata (the data about the data) to the repository, known as tDAR (the Digital Archaeological Record), thereby making it possible for others to discover and effectively use the uploaded information. The access provided to documents and databases will permit scholars to create and communicate knowledge of the long-term human past more effectively and to enhance the management and preservation of archaeological resources.

The Need for Digital Archiving

Much of the information produced by archaeological research over the past century exists in technical, sometimes lengthy, limited-distribution reports scattered in offices across the nation. Some of the data that underlie these reports are encoded in computer cards, magnetic tapes and floppy disks degrading in archives, museums, book shelves, file cabinets, or desk drawers, while the technology to retrieve them and the human knowledge to make them meaningful rapidly disappears (Eiteljorg 2004; Michener et al. 1997). Rather than systematically archiving computerized information so that it can remain useable, museums and other repositories typically treat the media on which the data are recorded as artifacts—storing them in boxes on shelves. Childs and Kagan (2008) found that only a few of the 180 archaeological repositories that responded to their recent survey reported charging fees to upload digital data from the collections and records they curated to computers for preservation and access. By far, the most common preservation treatment for digital data used by the repositories that responded to the Childs and Kagan survey preserves the media on which the digital data files are stored, but leaves the data on the media actually inaccessible. This physical curation is an inadequate long-term preservation approach as computer software and hardware change and as the bits on the magnetic and optical media gradually, but inevitably, "rot."

Much of the archaeological work in the United States involves federal funds, lands, or permits and is subject to federal law. Federal agencies already have the legal responsibility (36 C.F.R. 79; Sullivan and Childs 2003:23–38) to require curation of archaeological collections and associated records, including digital data, in a form that is accessible and will survive in perpetuity. Yet, despite federal mandates requiring preservation and access to digital data, the vast majority is difficult or impossible to access and will not be preserved in the formats in which they currently reside. The existing mandates already are in place to justify widespread professional participation. However, compliance with the mandates requires the existence of repositories capable of meeting the data access and curation needs.

The intertwined problems of data access, preservation, and synthesis are not new to archaeology. In the late 1990s, a series of meetings and panels were sponsored by the Society for American Archaeology, the Society of Professional Archaeologists (now the Register of Professional Archaeologists), and the National Park Service on the general topic of "Renewing Our National Archaeological Program." Improving the management of archaeological information through greater data access and synthesis was one of the major topics covered in this effort (Lipe 1997; McManamon 2000). The challenges of data access and preservation are not unique to archaeology. The September 10, 2009 issue of *Nature* began with an editorial calling for broader sharing of data and its long-term preservation and related reports on data access and preservation challenges (*Nature* 2009a, 2009b; Nelson 2009; Schofield et al. 2009). The editorial cited particular successes:

> Pioneering archives such as GenBank have demonstrated just how powerful such legacy data sets can be for generating new discoveries—especially when data are com-

> bined from many laboratories and analysed in ways that the original researchers could not have anticipated [Nature 2009a:145].

However, the editorial emphasized that most scientific disciplines

> still lack the technical, institutional, and cultural frameworks required to support such open data access—leading to a scandalous shortfall in the sharing of data by researchers. This deficiency urgently needs to be addressed by funders, universities, and researchers themselves...[Furthermore] funding agencies need to recognize that preservation of and access to digital data are central to their mission, and need to be supported accordingly [Nature 2009a:145].

Also in 2009 the National Academies released a book-length report on efforts to ensure the integrity, accessibility, and stewardship of digital research data (National Academies 2009). At the same time we look back on legacy data, we must also look forward. A substantial amount of public archaeological work is carried out annually. Federal agencies report approximately 50,000 field projects involving archaeological resources conducted in the United States, mostly by cultural resource management firms or agency staff (Departmental Consulting Archeologist 2009). Given the volume of data and reports produced each year, even archaeologists working in the same area often are unaware of important results that others have already reported. Archaeological studies are generating loads of data, but the data cannot be used efficiently and effectively to advance knowledge of the past. The difficulty of sharing information about and from existing research is exacerbated by the demographic transition underway in the ranks of professional archaeologists. Large numbers of archaeologists entered the profession in the 1960s and 1970s. These individuals are retiring or passing away. Now is the time to capture for long-term preservation and access the digital data associated with the work carried out by this cohort of archeologists. Accessing the information by relying on the memories of individuals, no matter how prodigious these memories might be, will be impossible once these individuals are no longer available.

Today, a great deal of time is spent searching for and acquiring relevant reports. Once found, more time is required to hunt for key data in volume after volume of hard copy reports that sometimes extend to more than a thousand pages. Yet, the ability to reanalyze existing data can make present-day investigations more productive and has the potential to recognize and reduce costly redundant projects.

The Digital Archaeological Record (tDAR)

In 2004, the National Science Foundation funded a workshop focused on the integration and preservation of structured digital data derived from archaeological investigations. The workshop included 31 distinguished participants from archaeology, physical anthropology, and computer science. The workshop report concluded

> for archaeology to achieve its potential to advance long-term, scientific understandings of human history, there is a pressing need for an archaeological information infrastructure that will allow us to archive, access, integrate, and mine disparate data sets [Kintigh 2006:567].

A subsequent $750,000 NSF grant funded the development of a prototype of tDAR, the digital repository software that will be refined and expanded as a part of the Digital Antiquity implementation. Development and testing of the tDAR prototype was led by Kintigh and involved a team that included Arizona State University archaeologists (Ben Nelson, Margaret Nelson, and Katherine Spielmann) and computer scientists (K. Selçuk Candan and Hasan Davulcu), as well as the Associate University Librarian (John Howard),

Digital Antiquity's repository will encompass digital documents and data derived from ongoing archaeological research, as well as legacy data and documents collected through more than a century of archaeological research in the Americas. The information resources preserved and made available by tDAR are documented by detailed metadata submitted by the user before uploading the data and documents. Metadata may be associated generally with a project or specifically with an individual information resource (e.g., a database, document or spreadsheet). In addition to technical and other bookkeeping data, these metadata provide spatial, temporal, and other keyword information that will facilitate other users' discovery of relevant datasets and documents. They also include detailed information about authorship and other sorts of credit that must (as a requirement of the tDAR user agreement) accompany any use of information downloaded from the repository. Finally, for databases and spreadsheets, they include column-by-column metadata that document the observations being made including "coding sheets" that will decode numerical values or string abbreviations associated with the appropriate labels of nominal categories.

tDAR now accommodates databases, spreadsheets, and documents in a limited number of formats. While the digital files are maintained as submitted, they are also—whenever necessary—transformed into a format that can be sustained in the very long term (e.g., translation of Word files into a more sustainable PDF/A format). Planned development includes the expansion of the data and document formats accepted, as well as the inclu-

sion of images, GIS, CAD, LiDAR and 3D scans, and other remote-sensing data. The inclusion of these more exotic forms of data awaits the completion of another component of the Mellon-funded project, development of "best practices" guidelines for the creation and preparation of metadata descriptions for different sorts of archaeological digital data. These guidelines build on the well-developed guideline series published by the Archaeology Data Services (ADS) in the United Kingdom (http://ads.ahds.ac.uk/project/goodguides/g2gp.html). Julian Richards, Director of ADS, and Fred Limp of the University of Arkansas are leading the preparation of these guidelines.

Individual repository data sets and documents will soon all have persistent URLs that will provide permanent, citable web addresses. When content is revised, earlier content is automatically versioned, so that the exact content as of a given date always can be retrieved. Sensitive information, such as site locations, can be restricted to qualified individuals. Investigators also can mark content (notably for ongoing projects) as "private" for a defined period, prior to a public release.

The development of tDAR, an easily accessible archive of digital archaeological data, offers the potential for more efficient and effective background research of past archaeological work, saving time and money for public archaeological management and preservation efforts, as well as for scholarly research. This online archive also will permit broad, comprehensive upgrading of digital data as new platforms for data storage and retrieval develop.

To achieve this potential, we must transform archaeological practice so that the digital archiving of data and the metadata necessary to make it meaningful become a standard part of all archaeological project workflows. To help jumpstart this transition Digital Antiquity has allocated $225,000 to a grants program to encourage the deposit in tDAR of important archaeological documents and data that already exist in digital form. More information about the criteria for grants and their availability will be widely distributed as the program develops.

Digital Antiquity

Digital Antiquity, the organization that manages tDAR repository, is the direct product of a multi-institutional effort to plan a sustainable digital repository for archaeological documents and data that was funded by the Andrew W. Mellon Foundation The Mellon Foundation has now funded the implementation of Digital Antiquity and tDAR in response to the $1,290,000 proposal that grew out of the multi-institutional planning grant. The proposal was authored by Keith W. Kintigh (Arizona State University), Jeffrey Altschul (SRI Foundation), John Howard (University College, Dublin), Timothy Kohler (Washington State University), Frederick Limp (University of Arkansas), Julian Richards (University of York), and Dean Snow (The Pennsylvania State University).

Digital Antiquity confronts several challenges to succeed as a sustainable digital repository. Its business plan envisions either a transition from an entity incubated by the University into an independent not-for-profit or to a unit of an established nonprofit with compatible goals that can manage Digital Antiquity's services and data assets in the long term. Digital Antiquity's business plan is based on a model in which those who are responsible for archaeological investigations will pay a fee for the deposit of data and documents in the tDAR repository. In return, long-term preservation of the data will be assured and access to the data and documents will be freely available over the Internet, with controlled access to sensitive data.

The Mellon Foundation implementation grant has funded the establishment of Digital Antiquity as an independent organization that, for a four-to-five year startup period, is hosted by Arizona State University. In November 2009, Francis P. McManamon, formerly Chief Archeologist of the National Park Service and Departmental Consulting Archeologist for the Department of the Interior, began working as the full-time Executive Director. The staff will include two full time software engineers, a data curator, user support specialist, and clerical staff.

Digital Antiquity is governed by a 12-member Board of Directors who oversee the performance of the Executive Director and provide entrepreneurial and disciplinary guidance. The Board of Directors is chaired by archaeologist Sander van der Leeuw, Director of ASU's School of Human Evolution & Social Change (formerly, Department of Anthropology), and has as members the individuals from six institutions whose efforts succeeded in obtaining the Mellon grant, plus four directors from the private sector with expertise in business, law, finance, management, and commercial information technology. A 12-member Science Board, composed of archaeologists representing different sectors of the discipline, computer scientists, and informatics experts, has been established to advise Digital Antiquity on technical and disciplinary matters. The memberships of both boards are available on the Digital Antiquity home page: http://digitalantiquity.org.

Conclusion

Digital Antiquity represents an exciting opportunity for advancing knowledge through improved and wider-ranging comparative analysis of archaeological data and easier synthesis of these data. Through tDAR, Digital Antiquity provides a mechanism for public agencies and other institutions to satisfy their legal mandates and professional responsibilities to provide access to the

digital records of archaeological research and to effect long-term curation using professional archival practices. Digital Antiquity will not only store data, but will provide the tools required by archaeologists to identify and access those data. It is anticipated that once tDAR is fully established and data begin to populate it, consulting archaeology firms and public agencies, as well as academic archaeologists, will be able to work much more effectively. It will enormously increase the accessibility—and impact—of the important work that the consulting firms and agencies do in managing, preserving, and protecting America's archaeological record. Indeed, widespread digital access to archaeological data of the sort provided by tDAR has the potential to transform the practice of archaeology by enabling synthetic and comparative research on a scale heretofore impossible.

The moment is right for this initiative. To succeed, however, cooperation and coordination throughout the discipline is needed. Those of us involved in Digital Antiquity look forward to working through mutually beneficial partnerships with diverse organizations and individuals to achieve the potential that the initiative offers.

Acknowledgments. We appreciate and have used the comments and suggestions of our colleagues: Jeff Altschul, Terry Childs, Tim Kohler, Fred Limp, Peggy Nelson, Julian Richards, and Dean Snow, on an earlier draft of this article. The Digital Antiquity initiative and tDAR, the Digital Archaeological Record, have been funded by grants from the Andrew W. Mellon Foundation and by the National Science Foundation (0433959, 0624341). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation or the Mellon Foundation.

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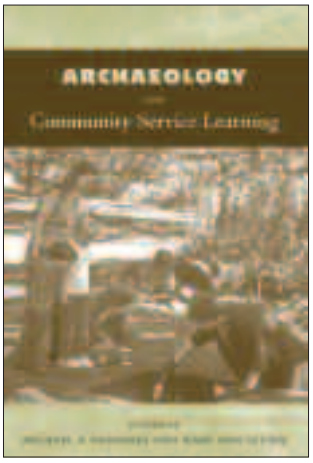
DIG IN



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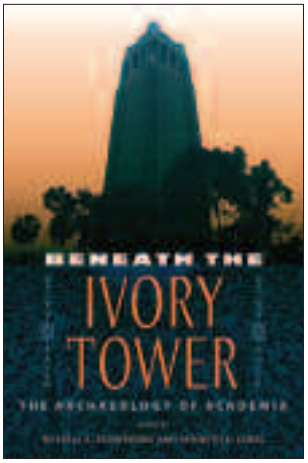

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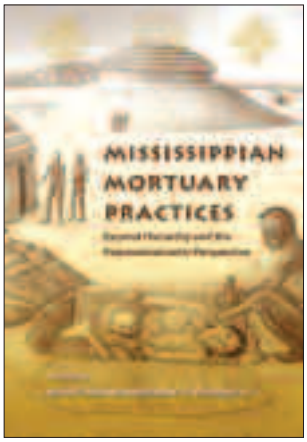

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IN MEMORIAM • RICHARD B. WOODBURY 1917–2009

Dick Benjamin Woodbury died October 11, 2009 at the age of 92 at his home in Shutesbury, Massachusetts leaving American archaeology bereft of one of the strongest proponents of his generation. He was born May 17, 1917 in Indiana and did his undergraduate training at Oberlin and then Harvard. Dick was one of three children of Charles and Marion Benjamin Woodbury. His family moved to Washington, D.C. in 1920 which strongly influenced his future career because he became a high school volunteer at the Smithsonian Institution. He found that doing mundane tasks for Neil Judd and his Pueblo Bonito collection and Ales Hrdlicka's Arctic artifacts resonated with his intellect. The summers of 1937 and 1938 were spent working with J. O. Brew and the Peabody Museum team at the site of Awatovi on the Hopi Reservation. This experience heralded a life-long love affair with the American Southwest. The analysis of the stone tools from the site of Awatovi, a previously long neglected aspect of Southwestern studies, eventually became his doctoral dissertation. At this time he also first developed a long-term interest in mystery novels with which he saw a close relationship to archaeology. His undergraduate seminars with Clyde Kluckholn at Harvard stimulated his theoretical interest in the broader field of anthropology.

After a short stint at Columbia University, where he met his future wife and life-long colleague and companion, Nathalie Sampson, he transferred to Harvard and continued interacting with Kluckholn. He received his M.A. degree in 1942. Dick's education, like most students of his generation, was interrupted by World War II when he served in the Air Force as a weather observer in Australia, New Guinea, and New Mexico. After the war Dick returned to Harvard, receiving his Ph.D. in 1949. Before the awarding of his degree, again like many of his cohorts, he worked at the University of Arizona's field school at Point of Pines on the San Carlos Indian Reservation. His interest in arid land and agriculture was stimulated there and eventually resulted in the *Memoir of the Society for American Archaeology,* "Prehistoric Agriculture at Point of Pines, Arizona." At Point of Pines he met Alfred Kidder who offered him a position on the Zaculeu Project in Guatemala, sponsored by the United Fruit Company. The elegant resulting publication was offered free and therefore was on the shelf of every graduate student of that generation.

Dick moved to Kentucky where he taught at the university from 1950 to 1952 and made his foray into Eastern archaeology. He and William S. Webb excavated his only Eastern U.S. site, the Adena burial mound at Dover. At the urging of his mentor, William Duncan Strong, he moved to Columbia University, teaching there from 1952 to 1958. While there, he renewed his interest in Southwestern archaeology by excavating the ancestral Zuni site of Atsinna at El Morro National Monument. Years later, he and Nathalie used their interest in the Zuni region to collaborate with Watson Smith to write up and publish the 1917–1923 excavations of Hawikku (Hawikuh) by Frederick Web Hodge. Dick and Nathalie were honored in 2004 by the Archaeological Conservancy for their work in the Zuni region by naming one of its preserves in New Mexico, a large puebloan room block, "The Woodbury Community." Dick and Nathalie were founding members of the Archaeological Conservancy and Dick was on its board, making the Conservancy a major bequest of his estate.

In 1958 Dick and Nathalie moved to Tucson and the University of Arizona to teach in the new interdisciplinary Arid Lands Program and Anthropology Department. In an era when graduate students seldom met socially with professors, Dick and Nathalie were known for their evening gabfests in their African art–filled home. They were a fixture around Tucson driving their VW bus, the ubiquitous professorial vehicle of the era. The Arizona sojourn extended Dick's involvement with prehistoric irrigation and arid land research, especially Hohokam irrigation techniques. With James Neely he explored the irrigation and agricultural techniques of the Tehuacan Valley for the Tehuacan Valley Archaeological and Botanical Project, under the direction of Scotty MacNeish. All in all, he published 24 articles on arid lands while at Arizona. He also founded and edited the "Arid Lands Research Newsletter" for the American Association for the Advancement of Science.

Dick and Nathalie moved to Washington, D.C. in 1963, where he became Curator of Archeology and Anthropology at the Smithsonian Institution, the place where he had volunteered as a high school student. Later he became the chairman of the Office of Anthropology at the Smithsonian, reinvigorating the discipline at that venerable organization. Because Dick missed the interaction with students, he accepted an offer by the University of Massachusetts, Amherst in 1969. His charge was to develop a separate anthropology program, divorced from the existing Sociology/Anthropology Department. Using his grounding in the four fields of anthropology, he built a nationally ranked department within a decade that quickly established itself as a leader in theoretical innovation, especially in archaeology and physical anthropology. He was chairman of the department until 1973 when he became Acting Dean of the Graduate Program and Associate Provost. He retired from the University in 1981, but like most archaeologists he definitely did not retire from the profession.

Not only was Dick an outstanding researcher, but he excelled at administration and the often unacknowledged attribute of facilitating research by others. Dick also had a long-term interest in the history of American archaeology. His volume on the history of the Pecos Conference is especially important because the organization keeps no formal written records. Dick's list of service to our profession goes on and on. He was the editor of both the *American Anthropologist* and *American Antiquity.* Dick introduced the practice of abstracts in *American Antiquity* and edited, along with Charles Brush, *Abstracts of New World Archaeology*. He was Treasurer, Secretary and President of the Society of American Archaeology; member of the Council and the Committee on Arid Lands for the American Association for the Advancement of Science; member of the Executive Board of the American Anthropological Association; member of the Executive Committee of the of the Division of the Anthropology and Psychology of the National Research Council; member of the Executive Committee of the Archaeological Institute of America; on the Anthropology Panel of the National Science Foundation; member of the Executive Committee of the Board of Directors of

☞ *WOODBURY, continued on page 44*

NEWS & NOTES

The Arizona Archaeological and Historical Society seeks an acquisitions editor for Kiva, which has been publishing Southwest archaeology, anthropology, history, and linguistics since 1935. The acquisitions editor serves a 3-year term, spearheads the publishing process and works with a book reviews editor, production editor, and the co-publisher, AltaMira Press. Although the editorship is based in Tucson, Arizona, the acquisitions editor may reside elsewhere. Please contact Stephanie Whittlesey (520-240-0988, swhittlesey@cox.net) with inquiries or submit a letter of interest and C.V. by May 15, 2010, to Stephanie Whittlesey, *Kiva* Acquisitions Editor Search Committee, 2441 N. Grannen Rd., Tucson, Arizona 85745.

The National Park Service's 2010 workshop on archaeological prospection techniques entitled Current Archaeological Prospection Advances for Non-Destructive Investigations in the 21st Century will be held May 24–28, 2010, at the Knife River Indian Villages National Historic Site near Stanton, North Dakota. Lodging will be in the in the communities of Beulah, Hazen, and Riverdale, North Dakota. The field exercises will take place at the Knife River Indian Villages National Historic Site. The park preserves the historic and archeological remnants of the culture and agricultural lifestyle of the Northern Plains Indians during the 18th and 19th centuries. This will be the twentieth year of the workshop dedicated to the use of geophysical, aerial photography, and other remote sensing methods as they apply to the identification, evaluation, conservation, and protection of archaeological resources across this Nation. The workshop will present lectures on the theory of operation, methodology, processing, and interpretation with on-hands use of the equipment in the field. There is a registration charge of $475.00. Application forms are available on the Midwest Archeological Center's web page at: http://www.nps.gov/history/mwac/. For further information, please contact Steven L. DeVore, Archeologist, National Park Service, Midwest Archeological Center, Federal Building, Room 474, 100 Centennial Mall North, Lincoln, Nebraska 68508-3873: tel: (402) 437-5392, ext. 141; fax: (402) 437-5098; email: steve_de_vore@nps.gov.

National Register Listings. The following archeological properties were listed in (or determined eligible for listing in) the National Register of Historic Places during the third and fourth quarters of 2009. For a full list of National Register listings every week, check "Weekly List" at http://www.nps.gov/history/nr/.

- American Samoa, Western District. *Tupapa Site*. Listed 10/30/09.
- California, Orange County. *Cogged Stone Site—CA-ORA-83*. Determined Eligible 7/10/09.
- Connecticut, Windham County. *Quinebaug River Prehistoric Archeological District*. 9/07/09.
- Florida, Citrus County. *Etna Turpentine Camp Archeological Site*. Listed 12/10/09.
- Illinois, Jo Davies County. *John Chapman Village Site*. Listed 12/10/09.
- Indiana, Hamilton County. *Taylor Ten*. Listed 12/24/09.
- Indiana, Porter County. *Collier Lodge Site*. Listed 12/24/09.
- Maryland, Talbot County. *Paw Paw Cove Site*. Listed 12/23/09.
- Massachusetts, Middlesex County. *Middlesex Canal Historic and Archaeological District*. Listed 11/19/09.
- Minnesota, St. Louis County. *ROBERT WALLACE (Shipwreck) (Minnesota's Lake Superior Shipwrecks MPS)*. Listed 10/14/09.
- Oklahoma, Murray County. *Lowrance Springs Site*. Additional Documentation Approved 12/02/09.
- Utah, Carbon County. *42Cb1252, 42Cb145, 42Cb1758, 42Cb2024, 42Cb2043, 2218, 42Cb242, 42Cb31, 42Cb33, 42Cb36, 42Cb46, 42Cb48, 42Cb50, 42Cb51, 42Cb52, 42Cb90, 42Cb97, 42Cb29, 42Cb30, 42Cb31, 42Cb730, 42Cb731, 42Cb736, 42Cb743, 42Cb744, 42Cb745, 42Cb746, 42Cb804, 42Cb809, 42Cb811, 42Cb851, 42Cb893, 42Cb969, 42Cb974, 42Cb706 (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Carbon County. *Cottonwood Village (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Carbon County. *Drop Dead Ruin (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Carbon County. *First Canyon Site (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. *42Dc306, 42Dc638, 42Dc682, 42Dc683, 42Dc684, 42Dc685, 42Dc686, 42Dc687, 42Dc688, 42Dc696, 42Dc700, 42Dc702, 42Dc703, 42Dc704, 42Dc705, 42Dc708, 42Dc709, 42Dc710, 42Dc712(Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. *Centennial House (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. *Fool's Pinnacle (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. Karen's Cist *(Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. *Maxies Pad (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. *Nordell's Fort (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. *Redman Village (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. *Sunstone Village (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Utah, Duchesne County. *Taylor's City (Nine Mile Canyon MPS)*. Listed 11/30/09.
- Wisconsin, Door County. *GREEN BAY (Shipwreck) (Great Lakes Shipwreck Sites of Wisconsin MPS)*. Listed 11/18/09.
- Wisconsin, Kenosha County. *WISCONSIN (Shipwreck) (Great Lakes Shipwreck Sites of Wisconsin MPS)*. Listed 10/07/09.

CALENDAR

2010

March 19–20

The South Carolina Institute of Archaeology and Anthropology (SCIAA) at the University of South Carolina will hold its second annual visiting scholar conference, "From Field to Table: Historical Ecology of Regional Subsistence Strategies," at the Inn at USC, Columbia, SC. For further information please contact David J. Goldstein, Visiting Scholar, SCIAA, goldsted@mailbox.sc.edu, phone: (803) 576-6571 FAX:(803) 254-1338; http://www.cas.sc.edu/SCIAA/index.html

April 14–18

The 75th Anniversary Meeting of the Society for American Archaeology will be held in St. Louis, Missouri. For more information, please visit www.saa.org.

April 17

National Center for Great Lakes Native American Culture, Inc. Academic Conference – "Eastern Woodlands Treaties." Location: John Jay Center for Learning, Portland, Indiana. Five top educators and tribal leaders will make presentations on significant historical treaties between the Eastern Woodlands peoples and the French, English and American governments, including the treaties in this area. Of interest to educators, teachers, students, local history buffs and lifelong students. Registration before April 10 of $30, $20 for students and includes catered lunch. For more information or a registration form contact Co-Chairs: Sara Wagar at sara.wagar@ncglnac.com or Boni Bent-Nelson at 574-225-9340 or bolnelso@iusb.edu.

May 5–8

The 33rd Society of Ethnobiology Annual Meeting in beautiful Victoria, British Columbia, Canada. This year's meeting theme: "The Meeting Place: Integrating Ethnobiology" celebrates the potential of ethnobiology to bridge disciplines, ideas, and communities, and to foster an understanding of the connections between the biological and cultural worlds. Visit http://ethnobiology.org/conference/upcoming to view our dazzling line up of papers, sessions, field trips, and special events.

May 24–28

National Park Service archeological prospection workshop at the Knife River Indian Villages National Historic Site near Stanton, North Dakota. Application forms are available on the Midwest Archeological Center's web page (http://www.nps.gov/history/mwac/). For further information, contact Steven L. DeVore: (402) 437-5392 or "steve_de_vore@ nps.gov."

WOODBURY, from page 42

the Human Relations Area Files; member of the Board of Trustees of the Museum of Northern Arizona; Smithsonian liaison for the Committee of for the Recovery of Archaeological Remains; and member of the Commission on Documentation of the International Union of Anthropological and Ethnological Sciences. In addition, he volunteered for many community causes in his beloved Shutesbury Township. I doubt that many can match Dick's contribution to our professional and personal community.

This catalogue of his many accomplishments, research efforts, and service roles does not speak to Dick Woodbury the man. Clearly, the reason Dick was asked to contribute to the profession in so many varied roles was, not only his intelligence, but also his acute sense of fairness, his willingness to listen to all sides of an argument, his ability to bring disagreeing parties to the table, his rock solid integrity, and his graciousness. Also not reflected in his resume was his role as a generous and inspiring mentor, a role he cherished. He was not only inspiring to students, but was especially helpful to younger professionals in all of anthropology's subdisciplines, gently guiding them along appropriate paths. His network through the profession generated an enormous tapestry of grateful colleagues and friends.

No account of the life of Dick Woodbury could be complete without mentioning the role of his adult life-long wife and companion, Nathalie Woodbury. She preceded him in death by only a short time. Although they were constantly described as a team, they both rejected that title (N. F. S. Woodbury and R.B. Woodbury, 1988, "Women of Vision and Wealth: Their Impact on Southwestern Archaeology" in *Reflections: Papers on Southwestern Culture History in Honor of Charles H. Lange* edited by A. Poore, pp. 45-56. Papers of the Archaeological Society of New Mexico, 14). They shared interest in the same archaeological projects, but usually in different aspects of the research. They had different interests, personalities, and styles, but there is no doubt that they were a pair of co-intellectually stimulating individuals.

My last view of the Woodburys was through a restaurant window in Amherst on an extremely windy and bitter cold winter day. Both of them, always very thin, held on to one another, each supporting the other as they had throughout their lives.

George J. Gumerman

We're NOT Playing with Matches!

$90,000 can be added to the SAA endowments before the end of the year – but only with your help.

The time has come to get on board and help us successfully close out the campaign to **"Give the SAA a Gift on Its 75th."** The following individuals and organizations have agreed to match the first $45,000 in new gifts made to the campaign after September 1, 2009. This is the time when your gift really matters.

Anonymous	$15,000
Desert Archaeology, Inc.	$15,000
Statistical Research, Inc.	$15,000

Match it or lose it! Our matching gift donors are serious – they want to see their SAA colleagues step up and invest in the SAA's future. If we don't raise at least $45,000 in new gifts, we lose the matching gifts as well.

The campaign to "Give the SAA a Gift on its 75th" will end at the upcoming 2010 annual meeting. **Double the impact of your giving and help insure we receive these matching gifts by making your our generous donation today!**

How to Give

Make your donation on your renewal form, or donate on-line at www.saa.org. A multi-year pledge is also an option.

Now more than ever, every gift will make a difference for the SAA and for American archaeology in the 75 years to come!

Contact Tobi Brimsek at 202-789-8200 with any questions.

SAA
Society for American Archaeology
900 Second Street NE #12
Washington DC 20002 USA

Coming Soon!

Voices in American Archaeology

Edited by Wendy Ashmore, Dorothy Lippert, and Barbara J. Mills