A Paperless Approach Toward Field Data Collection: An Example from the Bronx

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A Paperless Approach Toward Field Data Collection: An Example from the Bronx

Faline Schneiderman-Fox and A. Michael Pappalardo

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The most valuable resource that archaeologists collect and manage is the field record. Without an accessible and complete field record, even the most fascinating archaeological finds are of greatly diminished value. The effective management of this information invariably requires its transcription from paper forms into computers for analysis, reporting, and archiving. This transcription process is frustrating, expensive, and prone to error. The recent excavation of a quartz quarrying site in Bronx County, N.Y., provides an example of the effective application of handheld computers and appropriate software to the collection, management, and processing of the excavation record.

The excavation of the Bronx Quarry complex in Bronx County utilized The Missing Link, a computer-based system for collecting archaeological field data, as the primary data recording method. As fieldwork progressed, field archaeologists used this computer system to enter field data directly into a simple relational database-compatible format rather than onto notebooks or forms. Field data, such as coordinate-based provenience information, stratigraphy, artifact and feature descriptions, and lists of photographs and drawings, were entered into these small portable computers. At various points during fieldwork, collected data was exported from
the handheld computers to a computer for back up and processing, and it was made available to other applications.

Three significant benefits were realized by removing paper and pencil from field data collection at the Bronx Quarry complex: elimination of manual transcription; immediate access to collected data; and improved data integrity. This article provides a brief description of this hardware/software system in the context of this excavation's specific research goals and logistical requirements.

The Bronx Quarry Complex

In summer 1995 Historical Perspectives, Inc., was contracted to perform a Stage 1A Archaeological Assessment of a privately owned tract of land in Bronx County. While in itself not an unusual event, this particular site proved particularly intriguing, and equally frustrating.

As required by the review process, the property owner agreed to Phase 1 testing to establish the presence or absence of cultural resources, but imposed tight restrictions on site accessibility and personnel.

Throughout the Northeast, quartz lithic assemblages are prevalent in the archaeological record largely because of availability. Quartz, a leucocratic or light mineral, is the stable modification of silica at normal temperatures and is one of the most common minerals found in the Northeast. Quartz has little cleavage, making it a difficult lithic to work, and is hardly altered by weathering. Glacially deposited cobbles are widely dispersed and can typically be found almost anywhere, with little effort involved in procurement. Despite its abundance in the archaeological record, few quartz quarry complexes have been identified or professionally investigated in the Northeast.

Exposed Fordham gneiss bedrock at the site displayed intrusive quartz veins of various thicknesses and quality. A closer inspection of the quartz veins and chipping debris on the surface strongly suggested the site served as a raw material source for prehistoric Native Americans. The quartz veins did, in fact, display some signs of battering. But a visual inspection could not undeniably conclude that these marks were the result of cultural activity.

A geologist researching prehistoric chert quarry complexes in the Hudson Valley region proposed a model for expected site pattern of four distinct activity areas:

- the quarry itself where material is extracted
- the tailings pile, just below the quarry face, containing blocks of quarried material
- the ore dressing, milling, or transition area, located below and within about 50 m of the quarry face, where large blocks are broken down for transport
- the lithic reduction site, above the quarry face or on a level terrace adjacent to the quarry face, where reduced blocks are further reduced into preforms or final tools.

Historical Perspectives, Inc., had previously conducted Stage 2 fieldwork at a nearby site, a quartz reduction station which yielded over 200 pounds of culturally modified quartz from nine 1-x-1 m units. Equally large quantities of cultural material potentially existed at this site.

Logistical Constraints
Access to the seven-acre site was limited to a three-member field crew and a lithic analyst. This crew was allotted a total of only eight days to conduct fieldwork and wash, catalog, analyze, and photograph all recovered artifacts. No cultural material was allowed to be taken off-site, thereby preventing the physical analysis of recovered artifacts beyond this time period.

**Research Design and Methods**

Fieldwork was designed to determine if subsurface evidence of quarrying existed on the site, and if evidence to support the above model was potentially available. Field testing was to include an entire site investigation as per City Environmental Quality Review (CEQR) standards. A 10-m-interval testing grid was established across a promising 1 ha of the project area requiring the excavation of 99 50-x-50-cm shovel test pits (STPs). Out of these 99 STPs, 54 were positive for prehistoric cultural material. In addition, worked and unworked quartz was encountered on the surface. More than 2,000 artifacts were collected.

To accommodate the tight restrictions placed on our access to the site and its artifacts, handheld computers were used to collect most field data. A variety of information about each excavation location, the soils encountered there, and the cultural materials produced from each stratigraphic level were collected. These fields included the names given to STPs and strata, stratigraphy, soil depths, Munsell soil color and matrix description, intrusions, artifact content, and count. Grid coordinates were also recorded to facilitate the creation of three-dimensional artifact frequencies.

Collected field data were stored in the handhelds in a simple hierarchical data structure (Figure 1). Three types of records are collected on the handheld with each record being comprised of some number of relevant fields: Locations (STPs, units, features); Levels (arbitrary or natural, etc.); and Observations (artifacts, samples, documentation, etc.). The handhelds organize these records hierarchically with each Location having any number of Level records associated with it, one for each discrete stratigraphic deposit in this case, and each Level record having any number of Observation records associated with it. This data organization makes efficient use of the limited memory available on the handhelds, makes analysis much faster, and exports quite easily into PC-based relational database applications.

![Figure 1](image)

Using the handhelds, we were able to generate artifact frequencies and distribution tables while in the field. This gave us the ability to easily and quickly determine which areas needed further testing, and which were most likely to produce data needed to assess potential significance.

At the conclusion of each day of fieldwork, field data would be downloaded from the handhelds to the computer in the on-site laboratory. The field record was structured to be easily imported into a PC relational database format (Figure 2). This procedure would take only a couple of minutes. The daily field notes were then appended to the growing project files using Paradox for Windows, and additional artifact attributes were then appended directly to the field-collected provenience information. All 2,000 lithic artifacts were classed according to their source material and type, i.e., tool, projectile point, hammerstone, flake, block, shatter, or core, etc., by lithic analyst Zachary Davis. Obvious signs of battering, flaking, and retouching impact damage were recorded.
In an attempt to determine the types and patterns of quartz flaking generated by intentional quarrying, replicative work was attempted on site. With the permission of the New York City Landmarks Preservation Commission archaeologist, quartz was extracted from a vein situated on a steep slope judged too disturbed to render important data. Quartz blocks were dislodged from the parent vein using available cobbles, and all debitage was collected and analyzed to see how one "quarrying" event would compare to the lithics observed on the site. These data were also entered into the handheld, and percentages of debitage classes were quantified and compared to artifacts recovered from the site.

When the field investigation was complete, data collected in the field and from the replicative experiment were analyzed using the relational database system Paradox, and the contouring and mapping application Surfer. The assemblage of lithic material was sorted by stage of reduction, and simple statistics were generated to compare results of these two separate events. Surfer was utilized to take advantage of our coordinate-based collection of data. Concentrations of artifact attributes were quickly identified by running a series of queries to connect locational data to the results of lab analysis. Three-dimensional surface plots of artifact frequencies were generated to pin-point the most productive areas for different types of quarry debris (Figure 3).
Results

This comprehensive research, executed in a period of less than three weeks with the aid of the handhelds, led to some interesting results. For the majority of the parcel there was circumstantial evidence suggestive of prehistoric quartz extraction, since the flakes and reworked material found in both the subsoil and on the surface of the site were consistent in color and clarity with the material observed in the exposed quartz veins. Quarrying most likely occurred on site. However, the presence of in situ quartz primary vein cores, displaying obvious signs of battering and located in the subsoil of N70E21 in direct proximity to a parent vein, offered the best evidence of prehistoric quarrying. Within a meter of these primary cores was the largest collection of flakes found anywhere on the property, 219 in total, all within an area of about 50 x 50 cm (STP N70E20). Clearly, this cluster of a parent vein, primary vein cores, and small reduction flakes demonstrates that quarrying and reduction were taking place within a relatively constricted area.

Comparing the material generated from the controlled quarrying episode to the archaeologically recovered artifacts further confirmed this hypothesis. The large vein cores recovered in the experiment mirrored the primary cores recovered from test pit N70E21. For the experimental material, the sides of the core that remained inside the vein exhibited natural veneers, while the side that was exposed to the surface was covered with flake scars. This paralleled the appearance of the primary cores recovered in test pit N70E21.

Further, comparing the quantities and percentages of the types of lithics recovered from N70E20, the STP yielding the most flakes in the field, the overall distribution of cultural material across the site, and the material generated through a controlled quarrying episode showed that while quarrying was probably occurring across the entire site, controlled reduction was spatially confined.

Similarly high percentages of shatter, most likely generated from extraction, were recovered across the site (73.66% of all lithics) and from experimental quarrying (84%). However, a high percentage of flakes was found
in N70E20 (61%), as opposed to lower percentages across the site (12.4% of all lithics) and through experimental quarrying (11%).

These results strongly argue that quarrying occurred across the site, but reduction was primarily limited to the area of N70E20. Overall, the parcel produced more shatter than any other type of debitage; reduction flakes were less prevalent. This disparity resulted from the difficulty in forming usable flakes during the extraction process. The lack of accessibility to more than two sides of a quartz vein during the quarrying process prohibited the controlled creation of platforms necessary to produce flakes. Thus, shatter was predominant. The apparently strong correlation between observed quartz veins and concentrations of culturally generated quartz shatter shown in Figure 3 further supports this argument.

<p>| Table 1: Lithic field type frequencies by location |</p>
<table>
<thead>
<tr>
<th>Block</th>
<th>Shatter</th>
<th>Flakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location N70E20</td>
<td>12 (3%)</td>
<td>129 (36%)</td>
</tr>
<tr>
<td>Excluding N70E20</td>
<td>118 (14%)</td>
<td>604 (71%)</td>
</tr>
<tr>
<td>Experimental</td>
<td>8 (5%)</td>
<td>146 (84%)</td>
</tr>
</tbody>
</table>

To further test the quarrying hypotheses, refitting lithics was attempted. Two of the primary cores recovered from the intact B horizon of N70E21 refit perfectly. Additionally, the cores exhibited flake scars emanating from the newly exposed surface, caused by the break in the original larger core. This break appears to be cultural, since it did not occur on a natural plane of the vein, and differs from the natural breaks on the core sides that have not been knapped. The natural breaks appear flat and lack any curvature, while the break that produced the two refit cores showed some curvature—a sign of deliberate force. The splitting of these two primary nodules undoubtedly originated at the hands of a prehistoric knapper and not by natural processes.

Results showed that the site does possess in situ evidence of quartz quarrying, and that quartz primary cores found in the subsoil were in fact deliberately quarried from an exposed quartz vein nearby. From the artifacts recovered from the field investigation and additional experimental work conducted by Davis, it was concluded that Native Americans quarried quartz from outcroppings, quartz nodules were flaked to create diagnostic and non-diagnostic tools, and diagnostic tools made from non-local materials were also used and lost or discarded, but to a much lesser degree. The site lacked evidence of extended occupation, which was probably precluded by its angular and precipitous topography, thin soils, and abundant bedrock outcrops. The data has the potential to address many pertinent research issues.

Artifact distribution across the site does not suggest that the parcel fits the model of quarry layout of known chert quarrying sites in the Hudson Valley. That is, extraction occurred where convenient, tailing piles were located down slope, and no evidence of specific milling and/or reduction areas existed, with the exception of N70E20. Here, definite reduction occurred within 1 m of the parent vein. The distribution of reduction flakes across the rest of the site exhibited no obvious pattern. Of course, given that these are the results of data generated through only a limited testing phase, later work and more data may challenge these conclusions.

**Conclusion**

Using handheld computers to collect field data directly into a relational database format facilitated the timely completion of stated research goals within the logistical constraints posed by this project. Since no artifacts were allowed to be removed from the site, the efficient use of lab time was imperative. By eliminating the time-consuming transcription process normally endured in field archaeology, accelerated data processing was possible.
while maintaining data integrity. Immediate access to field data was also valuable for the day-to-day decision-making process.

Faline Schneiderman-Fox is currently a project director for Historical Perspectives, Inc., Westport, Conn., and A. Michael Pappalardo is with Missing Link Data Systems.
Editor's Corner

I am pleased to announce a new column: Interface--Archaeology and Technology. Archaeologists have been fascinated by technology and its change through time, and many of our most successful explanations about the transformations of past cultures have been driven by technological factors. We have also been avid consumers of new technologies and their progressive improvements. Radiocarbon dating, laser transits, magnetometer surveys, SLAR images, gas chromatography, and other, often acronym-labeled techniques have become part of our tool kits. We depend on technology, and many of us use it to make up for deficiencies, both real and imagined, in our data sets.

There are prices to be paid for this dependence, and one is the need to keep up with the rapid pace of change of our technological tools. Anyone who tries to keep track of sites on the World Wide Web, or has watched the explosive growth of the Internet knows what I mean. Yet rapid change is characteristic of other technologies as well, such as in DNA analysis of animal bones, pot residues, and blood stains, geographical information systems (GIS), and image processing and enhancement in service of lithic microwear studies, to name a few. More than ever, we need help in discovering new technologies.

That is the fundamental goal of Interface. It is simply one more filter, one more organizer, to help search for useful new technologies for archaeology. Obviously, I cannot sift through the literature of many different disciplines in search of the best and the latest. And it is possible that what gets published here will be passé to the ever-growing number of technofreaks in our field. What I can promise, however, is that I will solicit articles on promising useful technologies, broadly defined, that many readers may find interesting. Our first column is about the use of hand-held computers; these devices have been around, but there has been little published and disseminated about their use in field settings. Faline Schneiderman-Fox and A. Michael Pappalardo demonstrate how this computer can be profitably integrated into the research process.

I am especially interested in your thoughts on the content of this column. Please send me ideas, names of possible authors, or manuscripts. I'm looking forward to learning a lot, and I hope that as Interface grows, you'll feel the same.
NAGPRA Rule Published

The final rule implementing the Native American Graves Protection and Repatriation Act was published in the Federal Register on December 4, 1995. The rule establishes procedures for protecting and determining disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony that are intentionally excavated or inadvertently discovered on federal or tribal lands. It also establishes procedures for conducting summaries and inventories and repatriating human remains, funerary objects, sacred objects, and objects of cultural patrimony in museum or federal agency collections.

The final rule was prepared by the departmental consulting archaeologist, National Park Service, for the secretary of the Interior Department in consultation with the Native American Graves Protection and Repatriation Review Committee as directed by Section 8 (c) (7) of the act. The rule was initially published in the Federal Register as a proposal on May 28, 1993, to solicit public comment. The extensive preamble to the final rule addresses each of the substantive comments received during the comment period.

The text of the final rule is available on the National Archaeological Database (http://www.cast.uark.edu/d.cast/nadb.html). It is also available at most large libraries. The Federal Register is also now available on line at http://www.access.gpo.gov/su_docss/.
Letters to the Editor

- Letter from Mike Gottesman on CRM-related training.
- Letter from Kit W. Wesler on defining historical archaeology.
- Letter from numerous signatories on Dr. Anna Roosevelt's statements
- Dr. Anna Roosevelt's reply

I am encouraged to write to you in general support of the articles in the last two issues of the Bulletin by Schuldenrein and Blanton. These articles concern the non-marketplace training/education being provided at most colleges and universities in their Anthropology and/or Archaeology programs (actually in almost all Humanities Programs). A few points:

(1) You have the problem well-defined in terms of results: Most work is available only through CRM firms. CRM-related training is generally not provided. The result is that most new graduates (all levels) have low-level skills for the job market.

(2) Your solution is wrong. Effective CRM training needs to be a mandatory part of every student's course of study. Most graduates will end up doing something different over their lifespan than they are now planning. Academia cannot absorb all of them.

(3) What to do?

- Examine your curricula. Really now, are there not courses that could/should be eliminated? Courses taught by Professor Old Bones because he/she taught it since the Pleistocene? Courses which have reduced relevance--that are more like "hazing" courses (you had to take them, so onward ad nauseam).
- Add business courses and make them mandatory. For example, Budgeting/Finance, Project Management, Personnel Management. Consult with a few CRMs and get some help from your business school (or from volunteers).
- Add at least one course in Law/Public Archaeology. Maybe as part of an Ethics class.
- Add several courses in the sciences especially as related to the newer technologies and equipment being developed. Examples: microscopy, XRF, c14, obsidian hydration, archaeomagnetics, GIS and other mapping software, underground detection, etc. This is probably an area where CRMs could become directly involved.
- Add courses in English Composition and Public Speaking/Presentations. These are needed by all instructors, especially tenured faculty.
- Learn and teach time discipline. Start with marking grades down for late papers or other assignments. This is more serious than you may think.
A personal note: Our background (my wife's and mine) is in business—primarily Purchasing/Material Management and Project Management. We are now retired and have become active students (as an avocation) of archaeology. I dare say that either of us would be of more value to a CRM firm (based on work experience and prior training and degrees) than most new Ph.Ds. We both volunteer for and work with the UCLA Institute of Archaeology. The volunteer program is alive and well—and is going to get better. The effective use of volunteers is another area that most institutions could improve. But that is another editorial.

Mike Gottesman
Torrance, California

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It seems to me that Lawrence Moore's reply [SAA Bulletin 13(4):3-4] to Marshall Becker [SAA Bulletin 13(2):6] is a case of the pot calling the kettle shallow. Becker is not alone in decrying the tendency of the self-appointed definers of historical archaeology to narrow the field. I agree with Becker, because I think we tend to define the field too narrowly, and that we all specialize too much.

Moore's position seems to be that historical archaeology is what he and his favorite practitioners do, and no other definition should be allowed. This position reflects a number of definitions that boil down to this: historical archaeology is about European history in the last five centuries. Period. Non-Europeans who are assimilated or impacted by European culture can be slipped in the back door, but only if they have the right kind of artifacts in their sites.

There are various forms of this definition. Classic statements include Noel Hume's [North Carolina Historical Review 41(2):215-225, 1964] and Harrington's [American Anthropologist 57(6):1121-1130, 1955] identification of the field as handmaiden to history, to Dollar's [Conference on Historic Site Archaeology Papers 2(2):3-30, 1968] definition of historical archaeology as architectural in focus and reconstructive in scope, to Deetz's (In Small Things Forgotten, 1977) archaeology of the European expansion. The self-consciously new definition in Orser and Fagan's textbook (Historical Archaeology, 1995), cited by Moore, is a direct descendant. Mark Leone's work has led the way into this version of the definition: "Historical archaeology is the archaeology of the modern period, of the expansion of Europe. And the engine that drove that expansion was capitalism." He did specify that "the study of capitalism is a central focus of historical archaeology" (Ideas in Anthropology: 1994 Annual Report of the School of American Research, 1994), but Moore and others seem to think it is now the correct focus.

I am not satisfied with these definitions. I think with Becker, that historical archaeology ought to be broadly defined as the archaeology of people who can also be studied through documents. I see historical archaeology as an opportunity to compare two mostly independent data sets, archaeological and documentary (including oral), to test hypotheses and to complement each other for a fuller picture of the past. In effect, I see historical archaeology at its broadest as the archaeology of history.

It seems to me that the methodology of comparing documentary to archaeological data has common threads, whether the documents are cuneiform, hieroglyphic, or alphabetic, whether Sumerian, Roman, medieval Celtic, or colonial American. There are similar conceptual problems, and on the broadest level of anthropological and historical inquiry, comparable questions to be asked. The trendy term, "text-aided archaeology," coined to refer to this broader view, strikes me as the same kind of speech-code Correctspeak as "ethically challenged": we already have perfectly serviceable terms.

I can cite an example that I like to use in class. It is a case study in battlefield archaeology. It involves an army of a colonial power, a unit of the most powerful and best equipped army in the world at that time, on an expedition beyond its colonial frontiers. The army's mission was to round up and punish enemies that were considered ill-equipped, racially and intellectually inferior savages. It met the forces of the "savages" and was wiped out. Historical sources left a great deal of confusion about what happened. Archaeology on the battlefield
clarified a number of points. The so-called savages were as well armed as the army, and better organized than the army—and its historians—were prepared to allow. Archaeology identified previously unsuspected tactical positions, clarified the course of the battle, and went a long way towards explaining the army's disaster. Archaeology offered an entirely new, and unprejudiced, view of that battle.

Historical archaeologists should recognize this scenario. It is the battle of the Teutoberg Forest in A.D. 9, when Quintillius Varus led three Roman legions to disaster at the hands of the Germans [Dornberg, *Archaeology* 45(5):26-33]. Most historical archaeologists, however, would be unable to think beyond the Battle of the Little Bighorn in identifying the scenario.

I think that the parallels are striking, especially as case studies in the way archaeology can illuminate historical documentation in contexts formerly dismissed as scatters of hardware. Why do we not think comparatively often enough?

Mark Leone has commented on historical archaeology many times. In the 1970s, he was critical, looking for the direction that he has apparently found in the study of capitalism. Two of his comments have stayed with me (Leone, paper presented at the Society for Historical Archaeology, Nashville, 1979). He spoke of a sense of incompleteness in archaeology—in my interpretation, a sense that we are not doing enough, not tackling hard enough questions. He also suggested that historical archaeology does not really have a question to answer. What do we want to know that cannot be answered by historians?

I would like to propose a question, one that reflects my definition of historical archaeology in its broadest sense as the archaeology of history, of historical peoples. My question is this: what is the effect of literacy on human society?

The adoption of literacy affected individuals psychologically, and societies structurally; and we have only the vaguest notions of how. This is, in my view, a subtle and fundamental question. Can we create an archaeology of history that grapples with subtle and fundamental questions?

The study of literacy ranges across disciplinary boundaries. Why must archaeologists grapple with this question? Because the contrastive case is nonliterate societies—prehistory—and archaeologists can compare the two. Historians, among others, cannot.

My point is that historical archaeology has much to contribute to broad issues. Historical archaeology is the archaeology of literate societies. It is the archaeology of societies utilizing, and influenced by, literacy. The archaeology of history offers us the opportunity to build models informed by documentary and archaeological data, to test hypotheses and methods, to range analytically across complex societies and to provide a basis for comparing literate to nonliterate cultures. I do not think that we can allow historical archaeology to turn inward upon itself, never looking beyond the temporal and geographical boundaries of European cultures of the last five hundred years.

If scholars like Moore want to define a field of study restricted to capitalism or a Modern Period, they should choose a name that reflects their concerns: Modern Period Archaeology, or Post-Medieval Archaeology, or the Archaeology of Our Very Own Ancestors. Let the term Historical Archaeology reflect the breadth and inclusiveness inherent in its phrase.

Kit W. Wesler
Associate Professor
Murray State University

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We are submitting this letter to protest a number of statements published by Anna Roosevelt, impugning the work and reputation of Betty J. Meggers and Clifford Evans. Specifically, we refer to statements by Anna Roosevelt (1991, "Determinismo ecológico na interpretação do desenvolvimento social indígena da Amazonia," in Orígenes, Adaptacoes e Diversidade Biológica do Homem Nativo da Amazonia, Walter A. Neves, Organizador, pp. 103-141, Belém, Museu Paraense Emílio Goeldi, pp. 106-107) linking Drs. Evans and Meggers with the State Department and CIA, while they were engaged in fieldwork in South America, maliciously implying that they were involved in covert activities that had no bearing on the pursuit of science. Such assertions, published in professional journals, are reproduced without control and circulated indiscriminately among students and other colleagues outside our discipline leading to a gross distortion of the discipline's history (Funari, P. P. A., 1992, Resenha de Neves, W. A., 1991, Revista do Museu de Arqueologia e Etnologia, São Paulo 2:150-151).

Archaeological reports must not be used as forums for making unsupported accusations. If Roosevelt has evidence for her assertions, she has a moral obligation to present it to the proper authority. Attempting to link other archaeologists with organizations such as the CIA without providing any evidence is a reprehensible act. The profound political struggles that pervade many Latin American countries today often place innocent persons in danger of arrest simply because of association with suspected individuals.

We are concerned that Roosevelt's calumny may expand uncontrollably across South America, affecting many who are currently collaborating with the Smithsonian Institution. An account by Fred Wendorf describing the consequences of a similar accusation in Ethiopia against a North American demonstrates that Roosevelt's behavior is not only highly irresponsible, but also dangerous (F. Wendorf, 1993, Review of R. Bell "Impure science, fraud compromise, and political influence in scientific research," 1992, AJPA 92:410-409).

Before ending this letter, we wish to say that we know Betty J. Meggers and her late husband Clifford Evans very well and we have the greatest professional respect for them. Their lives have been entirely dedicated to the pursuit of science and archaeological investigations. In their numerous publications, we have never encountered any words of insult directed toward other colleagues. We testify without reservation, that we have never seen or felt any type of political or other unprofessional behavior. We also firmly assert that Evans and Meggers have demonstrated generosity and solidarity toward Latin American colleagues and students, to whom they have always given their support without regard to their nationality, politics, or social status. Their office in the Smithsonian Institution has been a point of convergence for generations of scholars, students, and colleagues from Latin America.

Our academic community is the appropriate body for debate and criticism of professional behavior. We request that the attitudes and actions of Dr. Anna Roosevelt be evaluated by the Committee on Ethics of the Society for American Archaeology, and that this letter and accompanying documents be transmitted to the Committee for that purpose. We request a published letter of apology and retraction from her.

Signatories by Country:


**Bolivia:** A. J. Arellano

Thank you for offering me 1000 words to reply to the above letter, which you forwarded to me. (The signers did not send it to me.)

The letter refers to "a number of statements published by me impugning the work and reputation of Betty J. Meggers and Clifford Evans," but what the letter refers to specifically is a statement that I am supposed to have made that Drs. Meggers and Evans worked for the CIA in covert activities during their research in South America.

In defending Drs. Meggers and Evans from accusations of CIA involvement, the writers are under a misapprehension. Far from suggesting that Drs. Meggers and Evans belonged to the CIA, I wrote generally of the OSS and diplomatic participation of contributors to the *Handbook of South American Indians* (edited by Julian Steward), who carried out research in South America, drawing a parallel between the spread of U. S. influence and the popularity of theories about the spread of prehistoric civilization from centers of advanced cultural and political development in South America. I was interested in how scholars' cultural background...
affects our attitudes to fields of study. To express an hypothesis about the roots of a group of scholar's theoretical preferences in terms of the national culture of the time is hardly a calumny.

To state that I have accused Drs. Meggers and Evans of working for the CIA because I mentioned Handbook contributors' military and diplomatic service does not fairly represent what I said. I certainly do not subscribe to the opinion that membership in the wartime OSS is tantamount to CIA membership simply because the OSS later became the CIA. I think it extremely unlikely. The majority of former OSS officers and diplomats did not continue in the CIA, to my knowledge. Further, wartime OSS and diplomatic service was and is considered honorable, and mentioning someone's participation is not a harmful calumny, contrary to the letter. (Many in my own family proudly served in the organizations.) Such participation is often mentioned in tributes to scholars. That is how I learned of scholars' participation in those organizations.

As to my critiques of Dr. Meggers' and Evans' theories about the development of cultures in South America, such are an integral part of science. It is not sensible to feel that such criticism is "impugning" their work. The theories were developed before the application of radiocarbon dating to archaeology, and it is not surprising that they do not fit what we now know of the culture history of South America. Academic fields grow by learning from continuing research. That I should point out the empirical problems with ca. 50-year-old theories does not seem a legitimate problem for the SAA Ethics Committee, to judge from my years of service on the American Anthropological Association Committee on Ethics.

I assume that some if not all of the theories in my own dissertation may in the end be proved wrong in part or whole. I do not think that anyone who points out problems in my nascent theories is impugning my work. Anyone highly sensitive to such critiques needs to keep refining and correcting their own theories as their thinking matures and new data come in. Otherwise one ends up in the position of uselessly defending outdated theories in the face of one's own data and that of rivals who gladly will point out any possible problems in the theories.

Collegial solidarity is a good thing but not when it leads to the denial of scientific problems or to inaccurate accusations against those who bring up the problems. To reiterate, wartime OSS service and diplomatic service are certainly not the same as CIA membership, and I have absolutely no reason to suppose that any of the South American anthropologists who served in the former worked in the latter.

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Report from the SAA Executive Board: Fall 1995

Keith W. Kintigh

The SAA Executive Board's fall meeting was held in Santa Fe November 3-5. It preceded a conference on the Public Benefits of Archaeology, organized by the National Register staff and cosponsored by a number of organizations including SAA. This article reports only the major issues considered and actions taken at the fall board meeting.

SAA Board and Committees--As the activities of SAA have expanded, it has become impossible for the Executive Board to deal adequately with all of the issues before it in its two- or three-day semiannual meetings. To address this problem the board established an Executive Committee consisting of the president, president-elect, treasurer, treasurer-elect, secretary, and executive director (ex-officio). The Executive Committee supervises the society's finances and prepares budgets for board consideration, assists in preparing the agenda for board meetings, recommends to the board the disposition of selected agenda items, and acts on behalf of the board between regular board meetings on noncontroversial issues.

Thus, the Executive Committee takes over most duties of the Budget and Planning Committee, which was eliminated. The responsibilities of the Finance Committee were expanded to include broad oversight of the society's fiscal affairs, previously carried out by the Budget and Planning Committee. The Fundraising Committee was also eliminated and the SAA Foundation has been asked to take over its functions. The Professional Relations Committee was eliminated, although the liaisons with other professional organizations will continue. The Task Force on Repatriation was changed into an advisory committee.

The board established a policy that codifies the committee appointments process. The goals of this policy are to make the appointments process work better and to encourage broader participation in SAA committees. This policy establishes three-year terms for chairs and members of committees and limits committee members (other than ex-officio members) and chairs to simultaneous service on two committees. Committee chairs will be provided with detailed information on these changes. The board also developed a policy for the approval of the design and implementation of surveys done by units of SAA and the use of the resulting data.

Government Affairs--The board heard reports from Government Affairs Committee Chair Judy Bense and Government Affairs Manager Donald Craib. They described SAA's extensive government affairs efforts in response to the initiatives of the new Congress, including ongoing use of the Government Affairs Network (GAN). Bense also outlined the revised structure for the Government Affairs Committee and plans for a group of state representatives that will work to make GAN more effective. On a related topic, President Lipe noted that a new Task Force on Renewing our National Archaeology Program, with Charles Redman as chair, will meet early this spring to recommend ways to improve the national archaeological program and ways to effect those recommendations.

Publications--The board discussed concerns raised by members about delays and lack of communication regarding manuscripts submitted to American Antiquity. The president reported that he and the SAA central office staff have been working with Editor Michael Graves to identify and attempt to resolve these problems. The president and the chair of the Publications Committee, Tim Kohler, have asked several members experienced in editorial matters to advise the Publications Committee on guidelines for operation of the editors' offices and on the process of transition between journal editors.
The editors-designate (Lynne Goldstein for *American Antiquity* and Gary Feinman and Linda Manzanilla for *Latin American Antiquity*) are now accepting new submissions to the journals. A program was approved to promote institutional subscriptions to *AA* and *LAA* in Latin America. New institutional subscribers to one journal in discount rate countries will get the other journal free for one year.

**Meetings**—The program chairs report a substantial increase in presenter submissions over the Minneapolis meeting (38%). However, by increasing the number of simultaneous sessions it will be possible to keep the rejection rate very low.

The board established policies on two meeting-related issues: exemptions associated with sponsored or invited sessions to the three-role rule (which limits the participation of an individual to three different roles in a meeting) and waivers of meeting registration fees. It was decided that all sponsored and invited sessions are subject to review by the Program Committee and are subject to the three-role rule. The only exceptions to the review process and three-role rule are the opening and plenary sessions, and, in special circumstances, "SAA Sessions" that are mandated by the board in furtherance of key society goals.

Under limited circumstances, the Executive Board will consider written requests by symposium organizers to waive annual meeting registration fees. Exceptions will be considered only for individuals who are not archaeologists or professionals in related fields who are invited to participate in a session in order to present information for the benefit of SAA members. (This would not include, for example, geologists participating in a scientific session.) Non-SAA members who participate only in plenary and opening sessions, or the specifically designated "SAA Sessions," may have the registration fee waived by the board.

**Information Technology**—The SAA Executive Office is now on the Internet. By the time this *Bulletin* reaches the readers, a World Wide Web site should be on-line ([http://www.saa.org](http://www.saa.org)). A prototype is already operational and development of the site will be ongoing. The board established policy guidelines for what information would eventually be publicly accessible and what would be restricted to members. As the site develops, the public will have access to general information about archaeology and SAA, extensive public education materials, the tables of contents of the journals, and listings of academic programs and consulting archaeology organizations from *Archaeologists of the Americas*. In addition, SAA members will have access to the text of the *SAA Bulletin*, the remainder of *Archaeologists of the Americas*, and job listings.

**Ethics**—The board affirmed an earlier recommendation for a bylaws change that would make the Ethics Committee a standing committee. The board asked the committee: to continue to accept member comments on the draft Principles of Archaeological Ethics; to reconsider the wording of the principle concerned with commercialization; and to propose a revised draft of the principles for consideration at the New Orleans board meeting.

**Register of Professional Archaeologists**—The board reviewed the draft proposal for the establishment of ROPA. Discussion was devoted to the issues of qualifications, finances, and ways to stimulate archaeologists to register. The board approved continued negotiation on the proposal. At the annual meeting in New Orleans, the board will consider a revised proposal and will sponsor an open forum on ROPA. Final approval of SAA sponsorship of ROPA will be by a mail vote of the membership.

**Public Education**—Upon recommendation of the Public Education Committee, the board established a Public Education Recognition Award. SAA is undertaking a pilot project in public education, substantially funded by U. S. government agencies, that will grant one or more states funding for an Archaeology Education Coordinator. This one-year pilot project will assess the potential activities and costs of a nationwide network of Archaeology Education Coordinators focusing on pre-collegiate archaeology public education. In addition, the board decided to fill, for one year using outside funding, a position of manager, public education, in the central office. The manager will serve as staff liaison to the Public Education Committee, administer the interagency pilot project, and prepare grant proposals to fund the society's public education program. A subcommittee of the board is following up on the recommendations of the Save the Past for the Future II conference.
The board discussed the poor response to the solicitation for subscriptions to *Archaeology and Public Education* that was offered to non-members at a very modest cost. In order to understand the reasons for the low response rate and to determine how public education information can be disseminated effectively, the board asked that the committee formally survey a sample of individuals on the *A&PE* mailing list who failed to subscribe.

**Budget**—The SAA finished the 1995 fiscal year with an $8,000 deficit due primarily to unanticipated increases in paper and postage costs incurred by the society's publications, additional government affairs expenditures necessitated by the new Congress, and a meeting of the ROPA Task Force. The 1996 fiscal year budget adopted in Minneapolis was reduced to retain an anticipated surplus of $13,000 despite increased expenses in a number of areas and lowered expectations for revenue from *Archaeology and Public Education* subscriptions. While member services will not suffer, the budget under which SAA is now operating is quite tight, with little room for new initiatives or discretionary spending. However, Treasurer Fred Limp reports that SAA remains in good financial condition, with reserves at 36% of the annual operating budget.

*Keith W. Kintigh is secretary of SAA.*
The Society for American Archaeology (SAA) appreciates this opportunity to provide testimony to the Senate Committee on Indian Affairs oversight hearings on Native American Graves Protection and Repatriation Act (NAGPRA) implementation. As the largest society representing archaeology in the United States, SAA was an active party in the drafting of the NAGPRA legislation and has continued to provide commentary on various aspects of its implementation. These oversight hearings are an appropriate forum through which to take a retrospective view of NAGPRA implementation, assess current progress on NAGPRA, and simultaneously isolate evident problems and pose potential solutions.

Overall, SAA is optimistic about the progress that institutions and tribes are making in complying with the law. We know of many examples of successful negotiations and consultations. Museums, other repositories, and federal agencies are taking seriously the multiple charges of collection inventory, tribal notification, and consultation with affected tribes. Most institutions appear to have met the major legislated deadlines for compliance. Likewise, Native American tribes, Native Hawaiian organizations, and Native Alaskan corporations have responded to various notifications and initiated dialogues with institutions, visited repositories, and in many instances have brought repatriation requests to closure.

This optimism, however, is qualified by the fact that institutions and tribes are engaged in individual compliance activities notwithstanding: 1) a lack of adopted regulations five years after NAGPRA passage; 2) draft regulations that do not provide adequate direction; and 3) a lack of adequate funding assistance that has placed substantial burdens on scarce operating budgets. Furthermore, it is the considered opinion of SAA that 4) the NAGPRA Review Committee is inadvertently compounding these problems by prematurely engaging in the advancement of protocols for the disposition of unaffiliated human remains, exceeding what we believe is their legislative charge, not allowing sufficient time for affiliated remains to be properly addressed by institutions and tribes, nor allowing procedures for unaffiliated remains to be informed by sufficient experience with affiliated remains.

The lack of adopted regulations for NAGPRA implementation has placed complying institutions, agencies, and tribes in the tenuous position of interpreting draft regulations to meet their independent needs. It should be noted that the two primary time points for compliance articulated in NAGPRA have already passed, that NAGPRA is now five years old, and that regulations have not yet been adopted to provide institutions and tribes with appropriate procedural guidance. SAA comments on the draft NAGPRA regulations have been submitted to the NAGPRA Review Committee and are a matter of record. These regulations still contain ambiguous language and do not provide adequate guidance, particularly in the area of determining cultural affiliation. SAA urges the committee to undertake immediate further review and comment on the draft regulations, modify them in a
fashion that makes clear to affected parties their roles and procedures, and then move the regulations rapidly toward adoption.

While SAA believes that substantial progress has been made by institutions and responding tribes toward NAGPRA compliance, these efforts have been severely hampered by inadequate federal assistance to fund the legislative mandate. Institutions and tribes have, of necessity, diverted scarce operating funds and personnel assignments, or sought special internal funding allocations, to meet compliance deadlines. Institution size or tribal size does not necessarily correlate with the magnitude of affected collections. As a consequence, many tribes are only now responding to collection summary notifications, and there are certainly institutions that are both late in compliance and/or have sought deadline extensions. The latter could have been avoided with appropriate budgetary allocations. At present, inventory compliance has been largely completed. However, the additional burdens of consultation, negotiation, and disposition have yet to be borne by either party. It is essential that sufficient funding for NAGPRA be made available to assist in these important ongoing phases of compliance.

NAGPRA was a carefully negotiated agreement on the part of affected constituencies including Native American organizations, museums, archaeologists, legislators, and others. The collective wisdom of these parties was to hold issues on the disposition of unaffiliated human remains and funerary objects in abeyance, with a view toward addressing affiliated remains and objects first, learning from this process, and with the knowledge gained, apply this information to the more difficult issue of unaffiliated remains. It was generally understood that resolving this issue would require a separate piece of legislation with further negotiations drawing on the experience garnered with affiliated remains.

Determination of cultural affiliation is not necessarily a simple or straightforward process, either for Native American groups or for institutions. Everyone is struggling with making these determinations now. NAGPRA was written to address a wrong seen by many that there were a number of human remains, funerary objects, and sacred objects that should be returned to those tribes with whom the materials are affiliated. The issue of unaffiliated remains goes beyond this initial intent, and when NAGPRA was written, this point was acknowledged by asking only that the NAGPRA Review Committee create a list of these remains and make some suggestions on how they might be treated. The treatment of unaffiliated remains must be rooted in the knowledge gained by the treatment of affiliated remains. As we have mentioned in a letter to the NAGPRA Review Committee, that committee could develop this process by assisting institutions and tribes in the immediately pressing processes of consultation and negotiation. The committee could also request that museums and tribes provide examples from their own negotiations and consultations, in an effort to provide the needed baseline data for recommendations for the treatment of unaffiliated remains.

It is not our experience that museums are trying to avoid their duties under NAGPRA; both tribes and museums are working hard to cooperate and consult. For all sides the deadlines are too soon, the money is limited, and everyone is severely hampered by the lack of regulations. We are learning a lot, and a lot of good will and new working relationships may ultimately come from this law. We do not need additional rules and regulations before we have even had the opportunity to complete the existing process.

Once again, we thank the United States Senate Committee on Indian Affairs for the opportunity to provide comment in these oversight hearings on NAGPRA implementation.

William A. Lovis is the Chair of the Committee on Repatriation for the Society for American Archaeology.
Defined by the courses of the Orinoco and Amazon rivers and their bridging stream, the Casiquiare Canal, the "Island of Guiana" of early exploration today comprises the national territories of Guyana, Suriname, French Guiana, as well as an eastern portion of Venezuela, and parts of Amazonian Brazil (Figure 1). The histories of these territories are diverse and have been written in five major European languages. This diversity has been a factor in the variable development and indigenization of archaeology in each territory. Whereas the process of development and indigenization was relatively rapid in Brazil, following the pioneer work at the mouth of the Amazon by Smithsonian Institution archaeologists Betty Meggers and Clifford Evans, it was less rapid in Venezuela. Both are relatively old, independent nation states with sophisticated European cultural infrastructures. A vastly different situation developed in the so-called Colonial Guianas (British, Dutch, and French) by virtue of their dependent political status, their chronically strapped economies, their perfunctory educational and cultural institutions, and their racially mixed immigrant populations. While archaeology could be easily grafted onto pre-existing European-based cultural infrastructures such as museums, universities, and specialized libraries, after World War II it was a pioneer undertaking in the Colonial Guianas. Suriname became a self-governing part of the Kingdom of the Netherlands in 1954, while Guyana achieved political independence from Great Britain only in 1966. French Guiana remains a département of metropolitan France to this day, and prospects for its political and economic advancement are not encouraging.
Among the relatively recent immigrant populations of these "Three Guianas" (African, East Indian, Chinese, Indonesian), the concept of history pertains to specific ancestral concerns that relate to identity and survival, and scarcely to the notion of cultural evolution for the Guiana area as a whole. There is, in addition, the "problem" of the non-immigrant Native Guyanese whose historical concerns embrace the entire territory and who implacably views all non-natives as intruders. However, with an area of some $1.6 \times 10^6 \text{ km}^2$, this "Island of Guiana" occupies more than a quarter of the area covered by the Amazon Basin rain forests, and boasts an antiquity directly associated with human migrations into the southern continent nearly 12,000 years ago. Therefore, the planning and development of archaeology in the Guianas must be seen as apposite to current global concerns regarding the recoverable history of the rain forest and its sustainable exploitation, as well as to problems centering on the past and future of its non-immigrant populations. With the increasing articulateness and national organization of the native peoples these two concerns bid fair to proving a single inseparable problem in the anthropology of the future: overpopulation. Today, the Native Guyanese exhibit with variable intensity an impatience with their political marginalization on the state peripheries. As horticulturists for well over the past 3,000 years, population pressure is presently generating a land hunger unknown to previous generations. This problem is exacerbated by efforts to develop the region, perceived by Native Guyanese as inimical to their traditional interests; in most cases development has meant state appropriation of their land and infringement of what they perceive to be their inalienable rights.

In Guyana, for example, the taking of "state lands" has restricted the reservations of Native Guyanese to semi-arid areas or areas of tropical savanna. Large expanses of the rain forests have been sequestered in the national interest for logging or mineral extraction by expatriate concerns. Some $3,600 \text{ km}^2$ of primary rain forest have been set aside for the Commonwealth and Government of Guyana Iwokrama Rain Forest Programme, which has been designed to develop and demonstrate methods of sustainable management of tropical forests. The associated developments of highways is regarded as an irreversible threat to the survival of long-held lifeways (Figure 2). With reference to indigenous history, a Native Guyanese scholar has recently published an eight-point classification of threats that are perceived to circumscribe the native effort at self-determination: tribal, pestilential, legislative, land, corporate, natural, cultural, and, above all, the threat of unbridled miscegenation.
Moreover, Native Guyanese are becoming increasingly impatient with an anthropology that to them, perpetuates their marginalization as "Amerindians." In fact, the quest for cultural autonomy within the region involves recognition of the historic cultural diversity of individual and independent nations of Arawaks, Caribs, Akawaio, and others. Some Warao surviving in northwestern Guyana consciously represent an archaeologically defined heritage dating back for 6,000 years. Their opinions on the appropriation of power from the European colonists by recent immigrants are expressed in their lukewarm responses to new-fangled institutions such as schools and clinics, which further the trend toward alienation. Problems of the development and indigenizing of archaeology are therefore the same throughout the Guianas, although responses to these pressures are variable. Nonetheless, since these problems are certain to determine the role of archaeology development during the coming century, they merit historical review.

At the time of its independence from Great Britain in 1966, Guyana had experienced 100 years of archaeological inquiry, dating back to missionary efforts stimulated by the publication of Lubbock's *Prehistoric Times* (1865). Initially, most archaeological inquiry was carried out by amateur British archaeologists. But at the turn of the century, North American professionals representing a variety of institutions, notably the Caribbean Anthropology Program of Yale University of the 1930s and the Smithsonian Latin American Program of the 1960s, undertook scientific development.

In the context of the developmental sequence proposed by Gordon Willey and Jeremy Sabloff (*A History of American Archaeology* 1974) for American archaeology, a classificatory-descriptive period had commenced with the work of the first missionaries of the Society for the Propagation of the Gospel on the Pomeroon River in 1866 and lasted until the first river basin survey in 1930. Although the classificatory-historical (chronology) period began around 1914 in North America, it was not initiated in Guyana until 1946, with the investigations of Cornelius Osgood from Yale University. As in the Caribbean, archaeological research tended to lag behind events in North America by three to four decades.
Osgood's pioneering work in stratigraphic excavation and ceramic classification was unfortunately aborted with the loss of his excavated materials in the Georgetown, Guyana, fire of 1945. This loss extended the above-mentioned developmental time lag by a few years. The integration of seriation with metrical stratigraphy, the identification of independent ceramic phases and traditions, and the framing of area syntheses in the structuring of a cultural sequence, all constituting the new theoretical orientation in North American archaeology, now had to await the investigations of Clifford Evans and Betty Meggers in the early 1950s and publication of their results.

By this time in North America, the succeeding classificatory-historical period (context and function) was already being replaced by the explanatory period. The second half of the classificatory-historical period, with its emphasis on the potential of artifacts for elucidating group behaviors and inter-relationships, particularly as expressed in settlement patterns, was represented by Meggers's experimental reconstruction of Taruma village succession based on the seriated sequence of 24 sites on the upper Essequibo River, as well as by Peter Seigel's site structure analyses among the contemporary Waiwai.

Thus, the interest and involvement of North American professionals resulted in drawing Guyanese archaeology into the mainstream discourse. This discourse was principally centered on Julian Steward's hypotheses (Handbook of South American Indians vols. 3, 5) concerning the probable origin and dissemination of tropical forest culture somewhere in the Guianas. Guyanese archaeological scholarship has maintained a central place in the Guiana region ever since this problem was first introduced by Steward half a century ago. Although the problem continues to remain unresolved, the Guyanese chronology that resulted from Evans and Meggers's contributions provided the foundation for all future work on the reconstruction of prehistory in the Guianas.

Unlike Brazil and Venezuela, the relationship between Guyana and North American archaeological theory was not shared by Suriname or French Guiana, where European connections have been maintained. In both cases, archaeological inquiry goes back 100 years and more. The activity in these two countries over the past century has primarily focused on surface finds of stone tools and the recording of petroglyphs and grinding surfaces on riverbed or riverbank outcrops, often for the benefit of European museums. Although the cry for a local archaeology had been made in Guyana as early as 1945 by the (British) curator of the national museum, in 1960 the (Dutch) curator of Suriname's national museum was still lamenting the exclusive conduct of Suriname archaeology by Dutch nationals. The situation largely remains unchanged, although in the field of physical anthropology, the Suriname-born medical doctor, M.D. Khudabux, has made notable advances in the study of Harris (growth arrest) lines on Native Guyanese and African skeletal materials. This continues a tradition initiated by the works of Crevaux (1875) and ten Kate (1886) during the final quarter of the 19th century.

Suriname's first professional archaeologist, a Dutch national, was appointed only in 1973. His successor, also a Dutch national, who left the country in 1981, was succeeded in 1995 by still another Dutch national, a cultural anthropologist. A Dutch-trained native Suriname archaeologist, appointed to the Ministry of Education in 1984, appears not to have established a high publication profile. In French Guiana, the first areal synthesis was included in a doctoral thesis submitted by a French archaeologist to the Université de Paris in 1994. The inevitable start-stop pattern of these expatriate investigations typifies the colonial or ex-colonial political situation and amply demonstrates the need for an indigenous archaeology grounded in the kind of continuing or developing social, cultural, and environmental problems that have been outlined above.

In the context of the history of American archaeology, the classificatory-descriptive period survived in Suriname until 1973, a good 60 years after its demise in the United States, and, in French Guiana another two decades beyond that. Even so, the nature of the materials investigated during this period (stone axes, petroglyphs, grinding surfaces) offered only limited scope for classification and regional synthesis. In the absence of excavation, the on-off nature of the associated reports, and the lack of commitment to sustained inquiry by workers principally trained in other disciplines, the period was entirely symptomatic of the political structure of the classical European colony. The brief classificatory-descriptive period (chronology) that followed in both countries was characterized by a few distributional extensions of certain ceramic cultures already identified by Evans and Meggers in Guyana, as well as by the definition of a few new ones on the Eastern Guiana Littoral (the coast between the mouths of the Essequibo and Amazon rivers).
Although Guyana boasts indisputable temporal priority in the history of archaeological investigations in the Guiana region, the research problem that continues to dominate inquiry--the place of origin and dissemination of tropical forest culture--was first put to the archaeological test, not in Guyana, but along the northeastern Brazilian coast in the territory of Amapa. The investigations initiated there by Meggers and Evans in 1948 were a direct and timely response to the challenge made by Steward earlier that year. These investigations brought the classificatory-descriptive period to an end and established the basis for an eventual areal synthesis involving the entire Eastern Guiana Littoral. However, this lay far in the future. The immediate result of these investigations was an unequivocal rejection of the migration route of the Steward hypothesis--down the north coast of South America from a supposed origin in the Intermediate Area, and up the Amazon and its main tributaries. Rejection of this route necessitated the proposal of an alternative for the postulated intrusion of tropical forest culture into the lowlands. The authors saw this as having proceeded down the Amazon River from the west, a theory which has since elicited a degree of dissent. The authors postulated that rather than constituting the source of tropical forest cultural development, the Guianas had served merely as a passive recipient of diverse lines of cultural influence deriving from the general Andean area of Peru, Ecuador, and Colombia. There the matter rests.

In the Venezuelan national territory, the Macizo de Guayana, covering nearly half the surface area of the country, is extremely difficult terrain, and this is reflected in the relative paucity of archaeological investigations there. On the upper Orinoco, the classificatory-historical period has provided evidence of occupations dating back to 7000 B.C., with implications of a regional trade network already based on the unique and massive jasper outcrops of the Roraima Highlands. This jasper occurs no farther than 64 W. Since it constituted the principal rock material used for tool making from Paleoindian times, it was a dominant factor in regional integration at all cultural levels. Results of the excavation of the Aguerito site on the middle Orinoco right bank were dated there by two radiocarbon series: 810-940 B.C. and 2030-3475 B.C. A choice between these alternatives was made on the basis of comparison with a series of thermoluminescence dates for the same site, as well as by comparison with the largely similar sequence at the Parmana site on the other side of the river. Although these comparisons favored the younger series, the excavators hesitated to reject altogether dates obtained elsewhere for ceramics in the third or even fourth millennium B.C. By suggesting the possibility of an early and extended ceramic horizon in the lowlands that was unrelated to either the Orinocan Saladoid or Barrancoid traditions, these workers presented an implicit challenge to the Steward model of the origin and dissemination of tropical forest culture. No alternative model has been forthcoming so far.

While the indigenizing of archaeology remains problematic in the context of chronic underdevelopment (professional training, development of museums, libraries, laboratories, publications, etc.), continued dependence on North American paradigms seems likely to accompany the science well into the coming century. Meanwhile an important development has been the establishment of the massive Iwokrama Rain Forest Programme in 1990 with international funding.

*Denis Williams is at the Walter Roth Museum of Anthropology, in Georgetown, Guyana.*
Regional Women's Receptions. Over the past two years COSWA has encouraged and provided seed money for women's networking receptions at a number of regional conferences. This activity is in response to the recognition that a large number of anthropology departments have no female archaeologists on their faculties. As a consequence, many undergraduate and graduate women have limited opportunity to meet and talk with professional women archaeologists. The regional networking receptions are designed to provide that opportunity, particularly since many students are not able to attend the national archaeology meetings.

Leslie Eisenberg organized a women's reception at the SEAC meetings, which was held on November 9 in Knoxville, Tenn. A total of 75 women were in attendance.

A luncheon for women will be held at the Southwest Symposium on Friday, February 9, in Tempe. A panel of speakers focusing on women and publishing in archaeology will be featured at the lunch. Contact Kate Spielmann for further information.

Barbara Roth is helping to organize a roundtable luncheon for the Northwest Archaeology meetings in Moscow, Idaho, this March.

Women as Professionals Roundtable Luncheon. COSWA will again be sponsoring a series of roundtables concerning career themes at the SAA Annual Meeting in April. The primary goal of the luncheon is to provide a forum for bringing senior women archaeologists into contact with graduate students and recent Ph.Ds. It is intended to provide women just entering the profession with an opportunity to discuss ideas and concerns with these archaeologists and to expand professional networks. Elizabeth Chilton and Hillary Chester are the organizers. Twelve tables have been arranged. Please see the SAA Preliminary Program, to be mailed in late January, for details.
I'm writing to comment on the "Point--Counterpoint" in SAA Bulletin 13(4) on "Historic Preservation and Native American Sites," which pitted Kurt Dongoske, Michael Yeatts, T. J. Ferguson and Leigh Jenkins of the Hopi Tribe against Lynne Sebastian of the New Mexico State Historic Preservation Office (SHPO). I do so hoping to clarify a technical but important issue of regulatory interpretation about which both parties seem to be confused. At the same time, perhaps I can reduce the confusion that may exist in the minds of readers uninitiated to the rubric of historic preservation by the arcane shorthand language used in the discussion. I offer these observations as one of the authors of the federal regulations and guidelines on which the "Point--Counterpoint" authors base their argument, and as one who continues to be involved in their interpretation.

For the benefit of the uninitiated: under Section 106 of the National Historic Preservation Act (NHPA) and the implementing regulations of the Advisory Council on Historic Preservation (36 CFR Part 800), federal agencies must consider and consult with the SHPO and other parties about the effects of their actions (land management, road building, military training...) on "historic properties." "Historic property" is defined by the NHPA as any property included in or eligible for the National Register of Historic Places. The National Register, a list of significant historic and prehistoric properties maintained by the National Park Service (NPS), includes districts, sites, buildings, structures and objects that meet criteria set forth in NPS regulations (36 CFR 60). These criteria are four, labeled a through d, and can be glossed as follows:

- **Criterion a:** Association with important events or patterns of events in history, prehistory, or culture.
- **Criterion b:** Association with important people in the past.
- **Criterion c:** Possession of distinctive characteristics of a class, school of architecture, etc.
- **Criterion d:** Known or likely to contain data important in history or prehistory.

A fundamental principle of the eligibility determination process is that evaluation is based *solely* on the significance of the property. Management concerns—what one wants to do with the property—are not to be considered. Just as one is not supposed to determine a wetland to be dry, a floodplain to be immune to immersion, or an endangered species to be thriving because one wants to manage the land in a particular manner, one is not supposed to determine a property eligible or ineligible, or eligible under one criterion as opposed to another, because of how one wants to manage it. We are supposed to evaluate properties solely on their merits. Then, in the remainder of Section 106 review, we figure out what to do with them. Their merits are, of course, considered in figuring out what to do, but they are not determinative. Any historic property, whatever criterion...
summarizes its significance, may be destroyed after Section 106 review if that review does not reveal a mutually agreeable way of preserving it. But every historic property, whatever criterion summarizes its significance, deserves the consideration that Section 106 review affords.

One kind of property that may be eligible for inclusion in the National Register is the "traditional cultural property" or "traditional cultural place" (TCP). TCPs are places whose historical significance is based in whole or in part on the roles they play in the ongoing traditional cultural life of communities; they are naturally eligible for the National Register most often under Criterion a because the ongoing cultural life in which they play a part is rooted in the traditional past--i.e., it reflects significant events or patterns of events in the community's cultural past.

Archaeological sites of all kinds, naturally, are most often determined eligible for the Register under Criterion d, because they contain important data.

An archaeological site may be a TCP, and vice versa. Properties are often determined eligible under multiple criteria. Therefore an archaeological site that is a TCP may be eligible under both criteria a and d.

So what is the argument about? The Hopi say that the archaeological sites created by their ancestors are eligible under Criterion a because of their association with the ancestors, as well as under d because of the data they contain. It seems reasonable enough, so what is the problem?

The problem is that Sebastian thinks that "(i)f all archaeological sites were eligible under Criterion a, every federal undertaking that impacted an archaeological site would require (Advisory) council review" [SAA Bulletin 13(4):42]. In other words, the Advisory Council would have to get involved in how to deal with every archaeological site threatened by a federal undertaking. This would be a time-consuming exercise, inconvenient for federal agencies, and pointless in the eyes of SHPOs and agencies who feel that the Advisory Council has little to contribute to decisionmaking about historic properties. Many tribes, however, feel that the Advisory Council is the only thing that stands between their TCPs and the unfettered ambitions of agencies; because of a history of bad relations between tribes and state governments, and because of the principle of tribal sovereignty, SHPOs tend not to be trusted by tribes.

But wait, how do we get from the National Register criteria to Advisory Council review? Why must the council review impacts on a properties and not on d properties?

Actually, for no reason whatsoever. It is all a misinterpretation. In the Advisory Council's regulations, there is something that we sometimes call the "research exception to the Criteria of Adverse Effect" [36 CFR 800.9(c)(i)]. Remarkably, under this exception, one can destroy a historic property and claim to have "no adverse effect" on it--thus reducing (though not eliminating) the amount of Advisory Council review a project gets--if three standards are met:

1. The property is "of value only for its potential contribution to archaeological, historical, or architectural research;"

2. This value "can be substantially preserved through the conduct of appropriate research;" and

3. The agency demonstrates that the research will be "conducted in accordance with applicable professional standards and guidelines."

The research exception was conceived by the Advisory Council in the mid-1970s, when it had no archaeologists on staff, wasn't particularly interested in archaeology, and wanted to minimize its focus on archaeology. At the time NPS, for which I worked, objected violently, as did SAA and other archaeological interests, because the exception appeared to assign archaeological sites to second-class citizenship, and doom them to routine salvage and destruction. We prevailed upon the council to define the exception tightly, as described above. The property had to be of value only for research, it had to be simple enough to plausibly recover all relevant data, and the agency had to be committed to recover the data in accordance with an acceptable research design.
Over the years, however, the tests articulated in the regulations for application of the research exception have come to be widely interpreted to mean something quite different and more simple-minded. "Value only for research" has come to be equated with National Register Criterion \( d \), and it has come to be assumed that any \( d \) property can be blown away under the research exception. Conversely, it is assumed that if the property is eligible under any other criterion, it can't be similarly subjected to summary recordation and destruction. This is why Sebastian thinks that if Hopi ancestral sites are found eligible under Criterion \( a \) it will mean Advisory Council review of effects on them, while if they are found eligible only under \( d \), the council will not be involved.

However, the research exception doesn't say anything about the National Register criteria, for some very good reasons. Most notably, because as discussed above, one is not supposed to consider treatment when one determines eligibility. Letting eligibility define treatment creates a door that swings both ways; it inevitably allows treatment to define eligibility. Because Sebastian sees recognizing an archaeological site's associative (Criterion \( a \)) significance as unnecessarily complicating the process of arriving at treatment decisions, she wants to avoid recognizing that significance. Conversely, of course, it is probably at least in part because the Hopi see eligibility under Criterion \( a \) as triggering further review, which they think will protect their interests and those of their ancestors, that the Hopi want their ancestral sites determined eligible under this criterion. What both parties are doing is letting their desires about treatment influence their evaluation of properties, and that inevitably taints the objectivity of the eligibility determination process.

Another reason the research exception doesn't refer to the National Register criteria is that the assignment of properties to different classes of significance is a rather serendipitous matter. Not long ago, I reviewed the archaeological program of a major Indian tribe, and surprisingly found that its staff never regarded any property as eligible under anything other than Criterion \( d \). This is a common phenomenon: archaeologists think in terms of \( d \); while historians and architectural historians think in terms of \( a \). The National Register criterion that gets assigned has more to do with the evaluator's training and interests than with the property evaluated. This haphazard assignment of "letter grades" should not be allowed to define how a property would be treated.

Finally, the research exception isn't just for archaeological sites, although archaeological sites are most commonly determined eligible under Criterion \( d \). The research exception is for properties whose "value" lies only in their "potential contribution to archaeological, historical, or architectural research." It applies to a deteriorating old barn with which there is nothing to do but make a record and knock it down, as well as it does to an archaeological site.

So the research exception does not refer to the National Register criteria, or even to the "significance" of the property. It refers to "value," which is intended to mean "value in the contemporary world," as opposed to historical, architectural, or cultural significance. In the case of our hypothetical old barn, it may be a fine example of barn architecture, and eligible under Criterion \( c \); and it may be the barn in which Elsie the Borden Cow was born and hence be eligible under Criteria \( a \) and \( b \), but if it's too rotten to be kept up or moved, if it has no value for adaptive use, public interpretation, or any other continuing function, then there is no point at all in subjecting its demolition to extensive review; it can be recorded and demolished under the research exception. Conversely, if the community really values that barn, and wants to prop it up as a monument to Elsie, the fact that some surveyor may have checked Criterion \( d \) on his evaluation form should not doom it to destruction after only expedited review.

Thus the decision about whether Hopi ancestral sites are eligible under Criterion \( a \) should be made without reference to the research exception. If they are determined eligible under \( a \), this does not mean that the research exception cannot apply; it can apply if the consulting parties agree that a given property has no contemporary value other than for research. Conversely, the research exception may not apply to a property determined eligible only under Criterion \( d \) if the consulting parties find that the property has contemporary value that argues for its preservation in place.

The "consulting parties" must include the Hopi wherever a property of traditional religious or cultural importance to them is involved; this is required by Section 101(d)(6)(B) of NHPA. Sebastian indicates that "(i) tribes are consulted concerning all archaeological sites that they want to be consulted about, regardless of the eligibility criteria..." [SAA Bulletin 13(4):42], so one would think that Hopi participation would not be a
problem. Her position on the eligibility issue, though, suggests that when she says "tribes are consulted" she does not necessarily mean that tribes are listened to. The logic of her position would seem to dictate that if she sees a property as eligible only under Criterion \(d\), she will pay no attention to a tribal assertion that the property has cultural value that should be considered before a decision is made to blow it away after data recovery.

Finally, regarding Sebastian's rule that "(n)o written record...(and) no oral tradition" equals "no eligibility under criteria \(a\) or \(b\) [\textit{SAA Bulletin} 13(4):13], it should be noted that this is not a rule established by the National Register criteria. Sebastian's rule seems to me to be arbitrary and capricious. The National Register criteria require "association" with events or people in order to be eligible under \(a\) or \(b\), not some sort of association that is defined or known before the property itself is discovered. Actually, I cannot imagine how any archaeological site that is eligible under Criterion \(d\) could not be eligible under Criterion \(a\). How can we honestly say that a property contains information significant in history or prehistory (the requirement for eligibility under \(d\)) if we don't think that the place is associated with important events or patterns of events in the past?

I think the participants in the "Point--Counterpoint" discussion in \textit{SAA Bulletin} 13(4) would be well advised to stop twisting around the language of the NPS and Advisory Council regulations, and devote their time instead to figuring out how best to manage impacts on places that have value to both archaeologists and Indian tribes. The Section 106 review process is supposed to be about resolving conflicts between preservation of historic properties and contemporary land uses. We do the public interest a disservice when we short circuit the process by manipulating the meaning of words.

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**COUNTERPOINT**

\textit{David A. Phillips, Jr.}

I'm distressed to see how a debate in the \textit{SAA Bulletin} over applying National Register criteria to Native American sites [Ferguson et al., 13(2):12-5, 13(3):10-13, Sebastian, 13(3):3] has degenerated [\textit{Anyon}, 13(5):4]. Surely we can do better than this. For those who do not live and breathe the Section 106 process, the question is whether we give most prehistoric Native American sites protection under the law by citing National Register Criterion \(d\) alone, or add an extra argument for protection by also citing National Register Criterion \(a\). The conceptual advantage to the extra step is that it may lead to more sites being avoided or excavated during the Section 106 triage. The practical disadvantage is that the extra step is redundant (once a site is eligible, it's protected, no matter how it got there), but can cause more delays in construction projects and add to the list of people who are fed up with the federal historic preservation process.

Part of the argument revolves around whether an archaeological site should automatically be considered important to a tribe's history, and thus eligible under Criterion \(a\), even when the site is not mentioned in a tribe's written or oral records, has no traditional uses(even intellectual ones), and in fact was not known to exist before it was brought to the tribe's attention. Not citing Criterion \(a\) in such cases doesn't deny the cultural historical link between the site and the tribe, it merely acknowledges that under current federal rules and guidelines, a reasonable and appropriate response is to give the site the same amount of protection under a different criterion. If this is not acceptable to tribes, the solution is to change the National Register criteria and guidelines, not to berate SHPOs for following rules they are supposed to follow.

I agree with Anyon that the differences between SHPOs and tribes are substantive. I disagree, however, that using only Criterion \(d\) "paves the way for the automatic mitigation of effect through data recovery." Having worked with the New Mexico SHPO for a decade, I'm not aware of a single instance where that office viewed data recovery as inherently under Criterion \(d\) and if Anyon's goal is to avoid more sites, he should argue for avoidance on its own merits rather than try to drag it in on the coattails of Criterion \(a\).
Finally, I am distressed by Anyon's accusations that the New Mexico SHPO is so interested in saving "developer's time" and "profit lines" that it would rather "dismiss" tribal concerns than take them seriously. Such personal attacks may retard resolution of the issue that has been raised. We are all in a leaky canoe; I would like to see less hitting of others with buckets, and more bailing.

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Working Together

CISCO'S KO'AN

Educating Archaeologists about Indigenous Peoples' Self-Determination in the Land Use Planning Process for Cultural Resources

John Allison

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Because of the feeling with which he said it, Cisco's Ko'an has kept recurring in my mind over the ensuing years. I have realized a great step in understanding what anthropology is all about. After almost 40 years since I took my first undergraduate anthropology course from David Olmsted at the University of California-Davis, I feel that I can understand the implications of a commitment to the concepts behind the buzzwords "cultural diversity" and "multicultural society."

I am using "it" to refer to the matrix, the framework, the medium within which cross-cultural understanding must occur. This has not yet happened. Currently the principle used is still "might makes right," a principle which could backfire in one's face.

People in the mainstream, European American economy, and political system have been going along under the old delusions that these "minority" groups will someday "advance" to their self-same values and perceptions and maybe even the same skin color--witness the old Mormon myth that Africans were cursed with dark skins and that the lighter color of the palms of their hands is an indication that they have been good and God is beginning to remove the curse. The "disappearing" Indians, Asians, Aftricans, Mexicans, etc., are expected to put the past behind them and take on the ways of the currently dominant social group, the "Americans."

At the same time, these whites are making every effort to sustain a European frame of reference into the future. They are admonished by their war chiefs not to forget the sacrifices of their ancestors who came on the Oregon Trail, even though the greatest numbers of "settlers" arrived on the railroad. They maintain their Finnish, Italian, Swedish, German, English, and French social fraternities and festivals. White supremacist groups are gaining power among the European Americans in response to the cultural solidarity of Mexicans, blacks, Indians,
Asians, and others. The white "sciences" carry with them not only the objective method, but the philosophical assumptions and interests of their European forebears.

Like most students of anthropology--especially archaeologists--I managed to insulate myself from really understanding the nature and importance of the differences between the worlds in which the differing peoples live; the depths of these separate realities. We "professionals" tend to cover the actuality of these differences with concepts that allow us to believe that these are mutually intelligible. We also tend to retain a linear framework for social evolution from "simple" to "complex," based on our own perception of others' reality. We don't want our boat rocked. After all, we are the experts on these things, and we don't want any uneducated people disturbing our cosmic order. There are a lot of jokes among tribal people about the ignorant anthropologists asking ridiculous questions and getting ridiculous answers from people who don't trust them.

Toward a Multicultural Nation

Now is the time to confront the hard reality of the actions necessary to provide the various needs of maintaining this cultural diversity apparently valued by our government. We must ask "What are the primary, critical, constituent elements--the cultural ecology--necessary to maintain and enhance these separate social systems and their cultural vitality?"

There are some universal primary elements of a critical cultural ecology for a multicultural nation, varying in specifics from one cultural group to another. Without government, private, community, and corporate support for this ecology for cultural diversity, the drive of these separate cultural groups to survive and grow will break down into open social conflict. We see the makings of this in the polarization that is being recognized in the United States as a result of such events as the O. J. Simpson trial, the siege of Wounded Knee, Ruby Ridge, the Rodney King disaster, the César Chavez leadership of the Mexican farmworkers union. We see it worldwide in such events as have recently taken place in the former Yugoslavia, the former U.S.S.R., the transformation of South Africa, the uprising in Chiapas, and numerous other situations.

If America really wants internal peace and a truly culturally diverse nation, one of the most obvious of these needs that must be supported is education within the "separate reality" of one's own cultural values and of one's own view of history. For most indigenous or "tribal" groups, the connection to their own landscape and its features is probably rivaled only by self-determination in education of their children. Among Native American populations, it is universally documented that their cultural life, in its spiritual aspect as well as its economy, is closely connected to the earth and specifically to the features and qualities of their indigenous landscape. My recent "ethnographic landscape inventory" for the Klamath, Modoc, and Yahooskin peoples documents this in detail (1994, The Cultural Landscape of the Klamath, Modoc and Yahooskin Peoples: Spirit, Nature, History. National Park Service National Historic Preservation Grants to Indian Tribes and Alaskan Natives. The Klamath Tribes, Chiloquin, Oregon).

When these bases for cultural integrity are taken away, it is like putting a noose around the neck of that cultural entity. They are then on their way to extinction as a distinct, self-regulating society. Such deprivation of the basic elements necessary for a group to control its own people's destiny is a common and complex process that goes with colonial conquest such as the one that took place in the United States. This process is sometimes called "enclosure."

The Current State of CRM
So, I tend to get a little impatient, in 1995, reading articles by archaeologists who still don't get "it." They continue to fail to recognize that what they are calling cultural resource "sites" are--for the most part--archaeological deposits whose components are divided by soil. The "site" or the place means nothing to them. They don't write their professional papers or teach their students about places. They deal in the distance between and physical-chemical qualities of the archaeological items or areas in time and space and in a story about how these relate to species of animals and plants in the landscape contemporary to a particular timeframe. They couldn't care less about the actual place as an experience, at least not in the articles I've read. Oh, they may also make some remarks or write a poem about the place, but their "professional" reports do not make this central to their "scientific" focus.

These archaeological items and soil residues, etc., in the context of their temporal-spatial relationships do not comprise "cultural resources," but are merely a resource to archaeologists who make up stories about these relationships between a people's marks left long ago and the other aspects of the physical landscape at that time. "Cultural resources" are resources to a living culture, not just the stuff of inquiry and theory-building for a specialized intellectual path descending from European cultures.

The only case in which the archaeological markers that say "site" to the archaeologist are not cultural resources is when there are no concerned, living descendants of the aboriginal or invading group who made it an "activity area." And whenever it is a cultural resource, the group for which it is that has prior rights in management and planning for that place. Of course if there are no legitimate heirs still alive who claim or would like to claim these rights, then it is strictly an archaeological site, and not a cultural resource site; and you guys who dig it can have it. But, if there are real attempts at locating these peoples and if real consultation takes place, there are few sites with archaeological values that are not also someone's cultural resources.

Archeology is a part of the study of cultures and histories known as cultural anthropology. It is a set of tools and associated techniques for using these tools for their contribution to what any individual in any society can observe. A shovel, a screen, a compass or surveyor's instrument, a meter tape, a magnifying glass and microscope: these are the main tools, ones that can be mastered by any person with basic learning skills. Beyond this they may use a set of hi-tech tools and techniques borrowed from geology and biology using mathematical notations and statistical theory to analyze such things as the age of a broken rock or to determine the animal source of residue of blood on an arrowhead--work that is usually contracted out by the archaeologist to a specialized laboratory. All the rest of academic European American archaeology is a conceptual framework that can be shown to derive from interests and assumptions inherited from European intellectual history.

The definition and value of cultural resources are both relative to each specific culture. For example, if "site" means anything at all to members of a specific society in a way that approximates its general use in cultural resource management in the English language, it has more to do with the nature of that place than with the deposits that that society's former activities leave there, even when those things were left there intentionally, such as rock art.

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Changes Are on the Way

Some cultural resource managers are, finally, getting "it." See some of the recent literature by anthropologists/archaeologists who are now serving indigenous peoples' governments in the field of cultural resource management. For example, see John Kinahan's "The Hills and the Rain Are Also an Elephant: Ritual and Environment in Namibian Rock Art" (paper delivered at World Archaeological Congress 3, New Delhi, India, 4-11 December 1994).

"Not only is there close similarity between trance experience and the habits and appearance of certain animal species, but the depiction of these in the rock art takes into account both natural features of the rock and the positioning of the site. In this way, the rock art gives the impression that it is mapped onto the physical and
This supports the further proposition that rock art sites define a landscape mediated by ritual activity" (Kinahan 1994).

This is not a new idea around this area where I live either, where the World Renewal ceremony stops cars on the Klamath River Highway once a year as the Karuk people ceremonially walk from one important spot to the other to complete the necessary ritual relation with the Earth. The walking and the place(s) with all its lifeforms and landforms and that above and below is the "site."

Now, a particular society has a choice to use or not use the archaeological methodology associated with European American tradition, depending on other values and their own approach to telling the history of their place(s).

With this kind of orientation in mind, the Klamath, Modoc, and Yahooskin Cultural Resource Management Enterprise (KLAMOYA CREME) was formed by a board of directors all of whom are acknowledged as members of these local communities. CREME has been trying to educate those who control the land use planning process across the aboriginal lands. They believe that even within United States' law, there is a tacit acknowledgment of cultural relativity. This is the premise, for example, of the American Indian Religious Freedom Act, and in the 1992 amendments to the National Historic Preservation Act, which specifically acknowledges their inherent, aboriginal right to act as their own "SHPO," according to their own self-determination in CRM on "Indian Lands" (a term that varies from the perspective of one group to another, from indigenous peoples to U.S. agency employee).

The board of directors is taking this to the county and city planning departments, and both parties are learning new things. One of the things that the city and county planners and the federal agency cultural resource/heritage resource managers are learning is that they can no longer dictate "a precise definition of 'cultural resources'" as W. R. Haase did for Ledyard, Connecticut:

Cultural Resource: consists of historic or prehistoric archaeological sites and standing structures; cemeteries, human burials, human skeletal remains, and associated funerary objects; and distributions of cultural remains and artifacts. (Haase 1995, "Archaeology, Land Use, and Development: Educating Communities Through Comprehensive Planning" CRM: 18(3):18-20).

The paragraph above may define resources to the culture of archaeologists, but I doubt that it defines resources to the culture of the local peoples who each hold long-term and recent simultaneous versions of the history (not the "prehistory" and "history") of the place(s) he calls Ledyard. It seems—from the perspective of an indigenous people's cultural resource management rights—to be a totally inappropriate and a nakedly political/business sales pitch on the part of an archaeologist for him to preach:

"But the archaeological community--both professional and amateur--must take the lead and carry the banner of archaeological protection to city hall, and to the local boards and commissions who must in turn adopt comprehensive plans and enforce the regulations" (Haase 1995:20).

There will be no nice and neat bulleted lists of step-by-step recipes that must be followed by the member societies in a multicultural national society--each member a sovereign society living in "it." There will be no simple recipe for "mitigation"; these must come from the consensus of individuals in each of the member societies that share the land of this multicultural society. There is only one process that I can tell you to follow—to be defined in each case anew—and that is the process of "consultation."

After witnessing Chiapas, South Africa, the U.S.S.R. and Yugoslavia; after long ago reading the work of American anthropologists such as Kathleen Gough Aberle, who understand that there is a relationship between the historic development of anthropology and imperialism; and, after all these words, need I explain any further? You shouldn't need a professional weatherman, certified by the American Meteorological Society, to tell you which way the wind blows: "The times they are a changin'."
John Allison is technical advisor to the all-tribal board of directors of the Klamath, Modoc, Yahooskin Cultural Resource Management Enterprise (KLAMOYA CREME).
Editor's Note: This issue's column is adapted from an open letter which appeared in NewsMAC (a newsletter for the New Mexico Archaeological Council), in July 1995. Although the letter was originally from the New Mexico state archaeologists to her colleagues practicing in the state, the message has national relevance and deserves consideration by the archaeological community at large. Kevin Pape

As I am sure you all are aware, the archaeological record of this country and the practice of archaeology itself are at greater risk today than at any time since the passage of the National Historic Preservation Act in 1966. In the current anti-regulatory, pro-business political climate, Section 106 compliance, especially as it concerns archaeology, is coming under intense scrutiny and pressure for change.

Every place I have gone in the last year, I have found individuals and organizations, such as the Advisory Council on Historic Preservation (ACHP), the National Conference of State Historic Preservation Officers (NCSHPO), and the Society for American Archaeology, talking about the threats to preservation in this country and what to do. Frankly, much of this discussion has amounted to hand-wringer and discussions about what we can do or stop doing in order to get ourselves "off the radar screen" of congressional budget cutting and program elimination. The NCSHPO, for example, has formed a task force on "rethinking archaeological mitigation" with a subtext of "how can we make archaeology a lot cheaper?"

First of all, I want to say that the archaeological sky is not falling just yet. On the other hand, there are some clearly visible cracks in the firmament. What I would like to propose is the somewhat Pollyannaish view that we all view this as an opportunity rather than an impending doom. There are things that we can do to improve the way we do archaeology, and now is a very good time to make those improvements. There almost certainly are
going to be important changes in how we do public archaeology in the future. We can wait to have these changes imposed on us—by the ACHP if it continues to exist, by the NCSHPO or the National Park Service, or worst of all, by Congress. Or we can try to get ahead of this wave of change and make our own, carefully thought-out changes before change is imposed from outside.

I am proposing that we work together as a professional community (and I will describe how I envision that happening below) to look not just at the costs of archaeology, per se, but at the cost/benefit ratio. The question that I would like us to address is "How can we improve the cost/benefit ratio of publicly funded archaeology?"

By publicly funded archaeology I mean archaeology paid for by the public, either directly in tax dollars spent by federal agencies or in Section 106 compliance costs incurred by industry and passed on to consumers. By costs I mean both monetary costs and costs in time delays, which we all know are sometimes more of a concern for industry than the monetary costs. And by benefits I mean both the current benefits to the public and the long-term benefits to our society of increased knowledge about the past.

Specifically, I plan to convene a working group that will address a set of critical questions. What are the costs of archaeology both in federal dollars and private sector dollars spent? What proportion of cost of doing business on federal land or with federal approvals is archaeological expenses? What are the public benefits of archaeology in increased knowledge, enjoyment, educational opportunities, recreation? What is the impact of heritage tourism on the state's economy? How has public archaeology contributed to our knowledge of the past? How good a job are we doing at preserving the prehistoric heritage of this state? How many jobs, how much money in taxes, and how much money in purchased goods and services (including per diem) are generated by archaeology in the state? And most important, what steps can we take to improve the cost/benefit ratio by minimizing the costs in money and time and maximizing the public benefits?

I have no interest in figuring out how to do cheaper archeology. But I and every archaeologist have a critical interest in figuring out how to ensure that every dollar spent on public archaeology is necessary and is yielding the greatest possible gain in preservation, research excellence, and public benefits. We owe it to the public that is paying for this; we owe it to the resources that we are professionally committed to preserving and conserving; and our job may well depend on our doing our best.

The results of the process that I am envisioning here will potentially affect every single archaeologist, and I would like to see everyone get involved. I propose that all of you form regional groups. These groups should include contractors, federal and state agency archaeologists, and academics--all professional archaeologists.

I suggest that one or two volunteer organizers for each regional group coordinate with your SHPO office, and the groups need to begin discussion NOW--face to face, phone, fax, email, small task groups, however you want to do it. But you need to be ready with information, ideas, and representatives to participate in the statewide working group. I know everyone is desperately busy; we are too. But please believe that nothing that any of us is doing is more important than this or has a greater potential to affect all of our professional lives more fundamentally than this. Most of us could find ourselves thoroughly not busy very soon if we do not address this issue seriously. We are going to be asked very difficult questions, and we must be ready with answers.

This working group will be making recommendations about the fundamental issues of public archaeology--site eligibility, effect, preservation, and mitigation. These are not things that the SHPO's office can or should decide alone; these are decisions that should be made and must be supported by the profession as a whole. Once the statewide working group comes up with a plan, we will work through the regional groups to give everyone in the profession an opportunity to comment on the plan; we are even discussing the possibility of convening a statewide congress to discuss the plan. Next we will begin working with other interested groups--tribes, industry, government agencies, avocational societies, etc.--to consider their issues for inclusion in the plan and to attempt to gain their support.

Where we go will depend on what has happened in Congress in the meantime. Assuming the Advisory Council's existence, the New Mexico SHPO will propose to amend our state substitution agreement with them to incorporate the procedural changes identified by the working group so that Section 106 can be carried out according to the plan. Whatever happens, we will be better off for having a plan in place and an organization set
up for disseminating information and ideas throughout the professional community. We very much need each other's help to ensure that we can meet and weather the challenges to public archaeology posed by the current political climate.

*Lynne Sebastian is the New Mexico state archaeologist.*
Taxonomic Identifications and Faunal Summaries:
What Should We Be Including in Our Faunal Reports?

Virginia L. Butler and R. Lee Lyman

Most faunal analysts asking questions about human subsistence or paleoecology would agree that taxonomic identifications form the cornerstone of their research. There is, however, little agreement about what constitutes an adequate or appropriate summary of taxonomic identifications, despite some discussion of this in the literature. Are simple lists of taxonomic frequencies sufficient? Should data summaries include explicit criteria used to assign specimens to taxon? What approaches to reporting best advance science and ensure an adequate archive of information for future researchers? Given the tremendous number of faunal studies generated each year and the range of detail provided in reports, we assembled a panel of faunal specialists during the SAA 60th Annual Meeting (May 4-7, 1995) to discuss basic questions of adequacy in faunal data reporting. The eight individuals who participated represent diverse research interests spanning multiple geographic regions and temporal periods, and were instructed to prepare brief remarks addressing the questions posed above. Subsequent discussion among the participants and the audience revealed certain common interests and understandings of the wide range of issues involved in basic reporting of zooarchaeological data.

Co-organizer Virginia L. Butler (Portland State University) began by underscoring the range of variation in reporting faunal data. She noted that while the presentation of taxonomic abundance data was basic to most reports, the lack of explicit mention of skeletal parts identified and morphometric and other criteria used to assign archaeological specimens to taxon compromised the value of such data because it could not be evaluated by other analysts. Jonathan C. Driver (Simon Fraser University), author of an important paper covering issues of faunal identification that was circulated to all participants prior to the meeting, remarked on how we might increase the validity and reliability of identifications. To gauge comparability across analysts, Driver suggested circulating a sample of bones among colleagues to determine the range of identifications that might be produced. How much variation would we find if multiple analysts identified the same bones? To assess reliability, he advocated re-identification of a sample of specimens some time after the original analysis to compare the results.

Elizabeth J. Reitz (University of Georgia) expressed concern over the final disposition of standard data (e.g., epiphyseal fusion, tooth eruption, age/sex, bone measurements) recorded during identification. Because editors often were reluctant to include large tables of basic faunal data in reports, particularly of refereed articles, she suggested that important information was not being archived. Donald K. Grayson (University of Washington) noted that analysts tend to have different research interests and objectives and that it would be difficult (if desirable) to advocate that a "standard" set of data, of the sort suggested by Reitz, be included in faunal reports. Rather, he stressed that one of our utmost concerns should be the careful curation of faunal materials. We need to ensure that collections are well-maintained for the use of future researchers. Grayson then brought the discussion back to Butler's remarks on the value of including explicit criteria for taxonomic assignments in faunal reports. He pointed out that not only do such descriptions permit evaluation, they are labor saving, allowing readers to use the published reports in their own research without having to expend time personally developing such criteria. Russell W. Graham (Illinois State Museum) emphasized the necessity of including explicit criteria used to make taxonomic identifications. Geographic location, morphometry, or age of the specimen, along with the taxonomy to which a specimen might be assigned, all influence our identifications; such information, clearly
presented in publications, will allow other analysts to evaluate an identification and accept or reject that identification in light of their own knowledge.

Mary C. Stiner (University of Arizona) reiterated Grayson's view that the research problem dictates the approach to analysis and subsequent data that are included in a faunal study. She pointed out that if editors are reluctant to include large tables or extensive descriptions because of space limitations, researchers must be persuasive, explaining how such materials are relevant and necessary to the study. She also noted that a clearly marked trail of analytic decisions would increase the long-term value of research. Kathy Cruz-Uribe (Northern Arizona) suggested that researchers be explicit about criteria used to assign bovid remains (and those from other mammals) to body-size categories. While agreeing that presenting criteria for taxonomic assignment is useful (and essential for extralimital and extinct species), she noted that at some level we have to take most published faunal identifications on faith. Co-organizer R. Lee Lyman (University of Missouri) summarized many of the previous statements and reiterated that data critical to a research question must be reported in detail, rather than in summary form. He also underscored the point that faunal remains should be treated like other artifacts in terms of their analytical and curatorial importance.

Subsequent discussion between forum participants and the audience raised several other issues. It was suggested that reports include information on the analytic or chronological units to which the faunal materials are assigned to allow other researchers to use the data for synthetic studies and that labeled identifications be included with curated specimens to assist future analysis and evaluation.

The goal of the forum was not to develop a list of rules or standards to which faunal analysts should be held. As many of the participants and members of the audience noted, there is no such thing as "standard" data in faunal data reporting. On the other hand, a general consensus emerged that more detailed discussion of analytic decisions behind taxonomic assignments as well as other measures would make our research results easier to evaluate, more comparable, and ultimately more useful to ourselves and other archaeologists and paleontologists.

Virginia L. Butler teaches in the Department of Anthropology at Portland State University, Oregon, and R. Lee Lyman is with the Department of Anthropology at the University of Missouri, Columbia.
A Victory for Rock Art in Portugal

João Zilhão

To archaeologists, rock art experts, and all those who stood for the preservation of the Coa Valley rock art:

Construction of the Foz Coa Dam is now canceled! The new Portuguese administration has decided to turn the Coa Valley into an archaeological park!

On November 7, 1995, during the submission to parliament of his government's program, the new prime minister, Antonio Guterres announced the suspension of construction work at the Foz Coa dam until the value of the archaeological heritage it would flood was adequately established. He made it clear that if confirmation of its worldwide importance was obtained, as he hoped, construction of the dam would be abandoned altogether.

The position of the new Portuguese authorities on this matter has since evolved very rapidly. On November 17 a group of seven cabinet ministers visited the site to explain the new policy to the local population. The worldwide importance of the archaeological heritage was assumed and, accordingly, it was announced that the dam was to be definitively canceled, that preparations for transferring the dam farther downstream, to the Sabor River, would begin immediately, and that the Coa Valley was to be turned into an archaeological park. An integrated plan of regional development centered on the establishment of that park was to be prepared under the coordination of the minister for economic and territorial planning. It was promised that this plan would be completed within two months and that work toward implementing it would begin immediately after its approval. Meanwhile, construction work at the dam location would continue for about a year for consolidation and landscape reconstruction.

These decisions were subject to parliamentary debate on November 24. Mira Amaral, the minister for industry of the previous government and EDP's (the Portuguese electric utility building the dam) principal supporter, and now a member of parliament, condemned them. Invoking once more the results obtained by the dating "experts" hired by EDP, he attacked archaeology as a nonscientific field with a "wishful thinking" approach toward reality and said that construction of the dam should be completed. In a devastating reply, the new minister for culture, Manuel Carrilho, attacked the attitude of Mira Amaral and the preceding administration toward the Coa dam issue: instead of receiving the news of the discovery of the Paleolithic open engravings as a justified motive for celebration, they had turned it into a nightmare, wasting a year trying to come up with clumsy tricks that would rescue the dam project. This attitude was classified as "ineptly demagogic" for trying to convince people that the impossible (building the dam while preserving the engravings) was feasible; as "uncultivated to a horrifying degree" for ignoring the basic premises of archaeological investigation and site preservation; and as inspired by a "technocratic barbarism" that had shocked the Portuguese public.

These statements were wholeheartedly supported by the Portuguese archaeological community. At the same time the new government announced a major reorganization of the field and formation of a new agency to oversee the country's archaeological heritage. Vitor Oliveira Jorge, a professor from the University of Oporto and one of the leaders of the "Stop the Dam" movement, has been selected as president and will report directly to the minister.

The national and international protest to stop the Coa dam and preserve its rock art has won a tremendous victory. I should like to remind you, however that all these decisions carry the implication, for the Portuguese taxpayer, of a loss of some $150 million (U.S. dollars) already spent in the work so far carried out at the dam.
These were not easy decisions; I believe that the new Portuguese authorities are to be strongly commended for their vision. What they have decided to do deserves the support of archaeologists and rock art researchers from all over the world, much as what the previous administration almost did, with the unfortunate help of the "direct daters," deserved our strongest protests. If you wish to manifest your views on the above, please write to the following addresses:

Antonio Guterres  
Primeiro-Ministro  
Rua da Imprensa a Estrela, 2  
1200 Lisboa  
PORTUGAL  

Manuel Carrilho  
Ministro da Cultura  
Palácio da Ajuda  
1300 Lisboa  
PORTUGAL  

João Zilhão is a professor at the Department of History, Faculdade de Letras de Lisboa, president, of the history section, Associação dos Arqueólogos Portugueses, and member of the Permanent Council, Union Internationale des Sciences Pre- and Proto-Historiques (UISPP).
ARPA Violator Draws Record Sentence

Earl Shumway, of Moab, Utah, who was convicted in August, 1995 of seven felonies, including four counts of ARPA violations, two counts of damaging federal property, and one count of being a felon in possession of a firearm, was sentenced in mid-December to six and half years in federal prison. According to Scott M. Matheson, U.S. attorney for Utah, it is the largest sentence ever handed down under the Archaeological Resource Protection Act.

Shumway was convicted of two ARPA counts and two counts of damaging federal property in Canyonlands National Park, when he used a helicopter to loot Dop-Ki Cave, an Anasazi site. He excavated, among other things, a number of human burials, including an infant wrapped in the remains of a ceremonial blanket. Another site he looted was Horse Rock Ruin in Manti LaSal National Forest.

Shumway maintained his innocence, but his claims were rejected by the judge, who was highly critical of Shumway's apparent unrepentant attitude. It was not only Shumway's attitude that affected the judge's decision to hand down a stiff sentence. During the sentencing hearing, Assistant U.S. prosecuting attorney Wayne Dance portrayed Shumway as a thief who had stolen from the nation's heritage and had once bragged about excavating his first human burial at age three. Shumway's past worked against him as well. He had been convicted in 1984 of an ARPA violation, and was placed on probation. Dance requested the judge to give Shumway the harshest sentence so as to protect cultural resources from him, to punish him, and to act as a deterrent to others.

Dance's comments were echoed by letters read at the hearing from the Hopi Tribe, the Utah state archaeologist, Kevin Jones, and Frank McManamon of the National Park Service. While each of these letters had their own perspective, they were unanimous in urging the judge to deal severely with Shumway.

One interesting twist used by Dance, and which may set a precedent for future ARPA cases involving the excavation of human burials, was to ask the judge to consider the infant burial as a "vulnerable victim" of Shumway's depredations. Dance argued that the disturbance of the human burial aggravated the severity of the looting.

As recommended by the U.S. Probation office, a standard sentence for ARPA violations should range from 51 to 63 months; Shumway was sentenced to 78 months, and was also instructed to pay a restitution of $5,510.

Archaeologists, Native Americans, and law enforcement officials expressed satisfaction with the sentencing. It is important to note that this story received considerable publicity from Salt Lake City newspapers, and the post-sentencing press conference was covered by local television affiliates.

This article was compiled from two sources: a December 16, 1995, article in the Deseret News of Salt Lake City, written by Brent Israelson, and a posting to the ARCH-L list server on December 18, 1995, by Garth Portillo, BLM State Archaeologist for Utah.
Lava River Cave Looters Convicted

Lava River Cave, located on the Deschutes National Forest, was looted late in 1989. The "thieves of time" were seeking to remove significant and scientifically important archaeological artifacts. Forest Service Law Enforcement Officers, staff archaeologists, and the U.S. Attorney's office led an investigation that bore fruit this past month.

The defendants, Michael Scott Barker II (LaPine, Ore.), Charles Thomas Foster (Rocklin, Calif.), and Jerry D. Chapman (Cheyenne, Wyo.) were sentenced in U.S. District Court in Eugene, Ore. to one count each of violating the Archaeological Resources Protection Act. Each of the individuals was placed on three years probation and ordered to pay a $25 fee assessment. In addition, Barker and Foster were fined $1,000 each and Chapman was ordered to perform 100 hours of community service in lieu of a fine. All defendants are prohibited from becoming involved in archaeological activity without the permission of their probation officer.

Archaeological sites throughout central Oregon are threatened by looting and vandalism. Federal land management agencies vigorously pursue these investigations not only to apprehend suspects, but also to deter future illegal activity.

According to Paul Clayssens, Deschutes National Forest archaeologist, "This sends a clear message that it is not okay to loot archaeological sites. The site they dug into resulted not just in the theft of artifacts but the destruction of the archaeological context, the soil matrix that contain valuable information on archaic climates, environments, and how people adapted to them. It is this kind of information that is so significant, not just to archaeologists, but those concerned with the larger questions relating to how we humans adapt to and change environments."

Others are outraged as well. American Indian heritage is at risk. "It shows a disrespect to American Indian people and their culture," said Jim Coburn, tribal liaison for the Forest Service and BLM in central Oregon.

According to Tom Pilling, president of the Archaeological Society of Oregon (ASCO), "we are concerned as private citizens about the damage a few individuals can do to our area's history." ASCO is embarking on a site stewardship program with the Deschutes National Forest to monitor sensitive archaeological sites and prevent such looting. Pilling invites those interested people to join his organization. "We have an open invitation to new members. ASCO does more than protect sites; we get involved in ongoing field research, sponsor field trips, present programs to local schools, and most of all, have fun!" Contact Tom Pilling (503) 548-5716, ASCO c/o COEC, 16 NW Kansas, Bend, OR 97701.
The international journal *Lithic Technology* is devoted to the archaeological and ethnographic study of stone tools. The journal publishes full-length articles, shorter comments, book and film reviews, commentary on recent events, and announcements of events to come. After a period of quiescence, it was resuscitated in 1993 and has put out two issues/year from 1993 through 1995. It is a primary source of information on the lithic database, and should be in every institutional archaeological library, and in the private libraries of all serious practitioners. The price is a modest $17.00/year (U.S.) or $20.00/year (outside U.S.). In addition, the journal has recently published its Special Publication #3: *Lithic Resource Studies: a Sourcebook for Archaeologists*, by Tim Church, with contributions by Julie Francis and Cherie Haury. It is the latest word on lithic sourcing, and contains an enormous annotated bibliography on the subject, as well as pointers on how to proceed. The cost of this 255-page volume is $23.00 (U.S.), or $25.00 (outside U.S.). To order either publication, please contact George H. Odell, Department of Anthropology, University of Tulsa, Tulsa, OK 74104.

Francis P. McManamon, NPS chief of archaeological assistance, was given the NPS Meritorious Service Award recently by Secretary of the Interior Bruce Babbitt. The award was presented by NPS Director Roger Kennedy at an archaeological conference in Santa Fe. The citation said that under McManamon's leadership the archaeological program changed in significant ways "particularly through initiatives that focused upon public education and awareness, training and technical information, data preservation, protection of the archaeological record in place, and improved archaeological curation and collections management."

Ronald Cockrell, former regional historian at the Midwest Regional Office, and now senior historian with the Great Plains System Support Office, is the 1994 recipient of the Roy E. Appleman-Henry A. Judd award, which recognizes outstanding work in cultural resources management. Cockrell was cited for the quality of administrative histories he has produced and general research excellence, his management of Section 106 compliance, and his mentoring of other NPS historians.

Federal activities have generated millions of objects and archival records that are managed in public trust by hundreds of federal and non-federal institutions around the United States. The U.S. Department of the Interior and the Phoebe A. Hearst Museum of Anthropology, University of California-Berkeley are sponsoring a conference to provide a forum for non-federal and federal participants to address major issues related to the long-term management of federally associated collections. The goals of the conference are to foster communication and cooperation, build new strategies of action, create new and revive old partnerships, and improve technical expertise related to managing federally associated collections of all kinds. Staff of state and private institutions that hold federally associated collections; federal curators and other professionals concerned with collections (e.g., archaeologists, biologists, and paleontologists); managers of federal agencies; tribal representatives and curators; university collections managers and curators; collections users (e.g., researchers, students, educators); staff of private consulting firms; and contractors are invited to participate. Themes and possible session topics include: building and strengthening partnerships between federal agencies and non-
federal institutions, streamlining management of federally associated collections, improving long-term
derogation of collections, and Native American issues. For more information, send your name, address,
institutional affiliation, phone number, FAX number, and email address to Fritz Stern, University of California,
Berkeley, Phoebe Hearst Museum of Anthropology, 103 Kroeber Hall #3712, Berkeley, CA 94720-3712, fax
(510) 642-6271, email f stern@uclink3. berkeley.edu. If you are interested in organizing a session or presenting a
paper, please send a 100-word abstract along with your contact information. You may also propose pre-
conference workshops for June 3 or 4. The deadline for receiving program proposals and abstracts is February
15, 1996.

The Curtiss T. & Mary G. Brennan Foundation announces a pilot program of grants to support
Precolumbian archaeological field research in Andean South America. Funds are available to a maximum of
$5,000 to support research designed to establish the significance of a proposed project and the feasibility of
carrying it to completion, or to fund an ancillary portion of an existing project important to the understanding of
the project as a whole. Application must be made by the sponsoring institution through the principal investigator.
Individuals are not eligible, and dissertation research does not qualify. Application may be made throughout the
calendar year, with deadlines of June 30, 1996, and December 31, 1996. For guidelines and application
materials, contact The Curtiss T. & Mary G. Brennan Foundation, 535 Cordova Rd., Suite 426, Santa Fe, NM
87501.

Smithsonian Institution Fellowships in Museum Practice. Proposals are invited for the fifth annual
Fellowships in Museum Practice program, a professional development opportunity dedicated to helping
museums increase their expertise and leadership. An award enables experienced staff to spend time at the
Smithsonian conducting research on a topic of importance to the field. Fellowships are individually designed.
Applications are accepted until February 16, 1996, for projects beginning after October 15, 1996. For guidelines
and application procedures, contact Nancy Fuller, Center for Museum Studies, Smithsonian Institution, MRC
427, Washington, D.C. 20560, (202) 357-3101, fax (202) 357-3346, email ompem016@sivm.si.edu.

The National Science Foundation has provided funding for an archives analysis of documents produced
by the Laboratory of Tree-Ring Research (University of Arizona), the Museum of Northern Arizona, the
Laboratory of Anthropology (Santa Fe), and the Gila Pueblo Archaeological Foundation, as well as individual
researchers. The study of the development and expansion of archaeological tree-ring dating during the 1920s,
1930s, and 1940s will be conducted by Stephen E. Nash (University of Arizona) under the guidance of Jeffrey S.
Dean. The dendroarchaeological research conducted during this period was undertaken by a relatively small
cohort of scholars, most of whom were trained by the founder of tree-ring dating, A. E. Douglass. This cohort
conducted research at a time when paper records and correspondence were the primary means of scholarly
communication. The proposed multilayered, controlled comparison and analysis of (1) sample acquisition
records, (2) unpublished documents, and (3) the published research record, are intended to illuminate facets of
the development of archaeological tree-ring dating that are not available through analysis of the published record
alone. The research will permit a clearer understanding of how the development of North American
archaeologists changed the way in which archaeological research was conducted. The research may therefore
facilitate an improved understanding of the processes by which anthropologists incorporate new techniques and
data in their investigations. Scholars interested in this research please contact Nash or Dean, Laboratory of Tree-
Ring Research, West Stadium, University of Arizona, Tucson, AZ 85721, email snash@anthro.arizona.edu.
POSSESSIONS OPEN

**Museum Educator, Lubbock Lake Landmark.** The Museum of Texas Tech University seeks a dynamic and creative individual to manage, develop, implement, and upgrade educational and public programming at the Lubbock Lake Landmark, an archaeological preserve focusing on the cultural and natural heritage of the region. The position includes giving tours and working with local and regional schools and teachers, youth, adult, and family programming, and volunteer recruitment, training, management, and evaluation; research and development of grant proposals for educational programming; and management of Landmark gift shop. Must be self-motivated, willing to work flexible hours, and have strong communication, planning and organizational, time-management, and interpersonal skills. Candidates must have a master's degree in Museum Science or Anthropology with previous experience in field work and in museum educational programming or curriculum planning. Previous management and supervisory experience within a museum setting is essential. Includes excellent benefits package. Send cover letter, résumé, and three references to Landmark Search Committee, Museum of Texas Tech University, Box 43191, Lubbock, TX 79409-33191. Position open until filled. EOE.

**The Cincinnati Museum of Natural History and Science is accepting applications for an archaeologist for the position of Curator of Anthropology.** The Curator will manage both Archaeology and Ethnology Departments. The collections include over 1 million items in prehistoric and historic archaeology and 10,000 items in ethnology. Primary duties will include research into Ohio Valley archaeology, care of collections, active participation in exhibit and educational functions of the Museum, and involvement in local and state-level archaeological networks. Minimum qualifications include a Ph.D. in Anthropology with a specialty in archaeology. Research interest in prehistory of the Northeast or Midwest is preferred. Museum experience and an established record of research and funding are desirable. EOE. Send vitae, letter of interest, and examples of publication or research to Kay Bolden-White, Director of Human Resources, Cincinnati Museum of Natural History and Science, Union Terminal, 1301 Western Ave. Cincinnati, OH 45203. Application deadline is March 1, 1996.

**Science Applications International Corporation (SAIC) has immediate openings for 1-2 full-time permanent positions in prehistoric archaeology.** Competitive salaries and excellent benefits. M.A. required, Ph.D. preferred. Must have strong organizational skills, at least 2 years supervisory experience, demonstrable success in managing large and small field projects, working knowledge of basic statistical analyses and computer applications, excellent writing skills, and a "team-player" attitude. GIS, geoarchaeological, or historic archaeological capabilities would be valuable. With over 20,000 employees, SAIC is the largest employee-owned consulting firm in the United States. Its Cultural Resources Management Group in California specializes in archaeological and historical studies in support of federal, state, and local regulations. Project locations concentrate in California and Nevada but occur throughout the United States. Send one current C.V., a letter of
interest, and names of three professional references to Forrest Smith, Personnel Manager, SAIC, 816 State St., Suite 500, Santa Barbara, CA 93101, fax (805) 965-6944. No telephone calls, please.

**Arizona State Museum, University of Arizona expects to fill an assistant curator of bioarchaeology**

position with academic professional status at competitive salary beginning summer 1996. Position involves management of the Museum's extensive human osteological and zooarchaeological comparative collections, institutional coordination with professionals, the public, and Native Americans in the context of repatriation issues, and scholarly research. Teaching a seminar is possible. Candidates should have a background in physical anthropology, human osteology, zooarchaeology, and the archaeology and ethology of the Greater Southwest. Ph.D. is required and previous publication, repatriation experience, and grants are desired. Closing date is March 15, 1996. Send letter of application, vita, names of three references, and examples of published works to the Director, Arizona State Museum, University of Arizona, Tucson, AZ 85721-0026. The University of Arizona is an Affirmative Action/Equal Opportunity/ADA employer. Women and minorities are particularly encouraged to apply.
CALENDAR

January 15, 1996
is 1,865,813 days since
the Maya zero date

February 24 - 25, 1996
WORKSHOPS IN ARCHAEOLOGY will be held at the 7th Annual International Conference at the University of Buffalo. For more information, contact Patrick S. Miller, psmiller@buffalo.edu, or Ezra Zubrow (716) 645-2511.

March 27 - 30, 1996
THE 19TH ANNUAL CONFERENCE OF THE SOCIETY OF ETHNOBIOLOGY will be held at the Santa Barbara Museum of Natural History. For information, contact Jan Timbrook, Department of Anthropology, Santa Barbara Museum of Natural History, 2559 Puesta del Sol Rd., Santa Barbara, CA 93105, (805) 682-4711 ext. 307, fax (805) 569-3170.

March 27 - 30, 1996
THE INTER-AMERICAN SYMPOSIUM ON AUTHENTICITY IN THE CONSERVATION AND MANAGEMENT OF CULTURAL HERITAGE will be held in San Antonio, Tex. Specialists from all over the Americas will convene to discuss what the topic means in the cultural context of this hemisphere and its implications on the management of our cultural heritage. Working languages for the symposium will be English and Spanish, and simultaneous translation will be provided for all plenary sessions as well as for all discussion groups and associated events. Special rates will be available to all event registrants at the Saint Anthony Hotel. Additional information can be obtained from Inter-American Symposium, US/ICOMOS, 1600 H St., N.W., Washington, D.C. 20006, (202) 842-1866, fax (202) 842-1861.

March 29 - 30, 1996
MATERIAL SYMBOLS: CULTURE AND ECONOMY IN PREHISTORY, the Annual Visiting Scholar's Conference, will be held at Southern Illinois University. Presentations will include theoretical discussions and archaeological case studies, focus on relationships between economic and political behavior and symbolisms of status and prestige, gender, ritual and cosmology, and ethnicity. For more information, contact John Robb, CAI, Southern Illinois University, Carbondale, IL 62901-4527, (618) 453-5057, fax (618) 453-3253, email jrobb@siu.edu.

April 10 - 14, 1996
THE 61ST ANNUAL MEETING OF THE SOCIETY FOR AMERICAN ARCHAEOLOGY will be held at the Marriott Hotel in New Orleans, La.

April 15, 1996
HISTORY AND PREHISTORY OF CERAMIC KILNS SYMPOSIUM will be held in Indianapolis, at the annual meeting of the American Ceramic Society, sponsored by the Committee on Ceramic History. The focus
will be on kiln and kiln-firing technologies across a wide cultural area and span of time. For further information, contact Prudence M. Rice, Department of Anthropology, Mailcode 4502, Southern Illinois University, Carbondale, IL 62901, or W. David Kingery, MSE-338E Mines Building, No. 12, University of Arizona, Tucson, AZ 85721.

May 1 - 5, 1996
THE 29TH ANNUAL CONFERENCE OF THE CANADIAN ARCHAEOLOGICAL ASSOCIATION will be held at the Delta Barrington Hotel, Halifax, Nova Scotia. The theme will be Communication, including the dissemination of knowledge to the public and the development of collaborative programs with the communities we serve. Papers will be scheduled for May 2-4, with special events and workshops May 1 and 5. For further information, contact Stephen Davis, Conference Coordinator, Department of Anthropology, St. Mary's University, Halifax, Nova Scotia, Canada B3H 3C3, (902) 420-5631, or Rob Ferguson, Program Coordinator, Parks Canada, Historic Properties, Halifax, Nova Scotia, Canada B3J 1S9, (902) 426-9509, email rob_ferguson@pch.gc.ca.

May 20 - 22, 1996
THE AMERICAN QUATERNARY ASSOCIATION (AMQUA) 14TH BIENNIAL MEETING will be held in Flagstaff, Ariz. For more information, contact Jim I. Mead, Department of Geology, Northern Arizona University, Flagstaff, AZ 86011-4099, fax (520) 523-9220, email jim@vishnu.glg.nau.edu.

May 20 - 24, 1996
THE INTERNATIONAL SYMPOSIUM ON ARCHAEOMETRY will be held at the University of Illinois at Urbana-Champaign. For further information, contact Sarah Wisseman, ATAM Program, University of Illinois, 116 Observatory, 901 S. Mathews, Urbana, IL 61801, (217) 333-6629, fax (217) 244-0466, email wisarc@ux1.cso.uiuc.edu.

May 24 - 26, 1996
THE 3RD EASTERN STATES ROCK ART CONFERENCE will be held at the University of Maine at Machias. The conference will include participants from eastern and central United States and from Canada. Guided tours of prehistoric Algonkian petroglyph sites on Machias Bay are planned for Friday afternoon, May 24, and for Sunday morning, May 26. Saturday, May 25, will be given to presentations on rock art research with informal meetings and discussions Friday and Saturday evenings. For further information, contact Mark Hedden, Maine Historic Preservation Commission, 55 Capitol St., Augusta, ME 04333.

June 5 - 7, 1996
THE U.S. DEPARTMENT OF THE INTERIOR AND THE PHOEBE A. HEARST MUSEUM OF ANTHROPOLOGY, UC-BERKELEY, ARE SPONSORING A CONFERENCE to provide a forum for non-federal and federal participants to address major issues related to the long-term management of federally associated collections. The goals of the conference are to foster communication and cooperation, build new strategies of action, create new and revive old partnerships, and improve technical expertise related to managing federally associated collections of all kinds. For more information, send your name, address, institutional affiliation, phone number, FAX number, and e-mail address to Fritz Stern, University of California, Berkeley, Phoebe Hearst Museum of Anthropology, 103 Kroeber Hall #3712, Berkeley, CA 94720-3712, fax (510) 642-6271, email fstern@uclink3.berkeley.edu.

June 12 - 15, 1996
August 3 - 9, 1996
THE CULTURAL ASPECTS OF ASTRONOMY: AN INTERSECTION OF DISCIPLINES, an international meeting to study the importance of astronomical phenomena in human culture, will be held at St. John's College in Santa Fe, N.M. This will be the fifth in a series of triennial "Oxford Conferences in Archaeoastronomy" that have focused on the role that astronomical phenomena have played in human societies. "Oxford V" will serve as a meeting place for those working in a number of disciplines who share a common interest in the reaction of traditional societies of the past and present to these phenomena. For further information, http://www.phys.unm.edu/~zeilik/oxfordV, or from Rolf Sinclair, Program Director for Special Programs, Division of Physics, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230, (703) 306-1809, fax (703) 306-0566, email rsinclai@nsf.gov.

August 4 - 11, 1996
THE XXIV MEETING OF THE MEXICAN SOCIETY OF ANTHROPOLOGY will be held in Tepic, Nayarit, Mexico. The theme will be "Anthropology and History of Western Mexico." For more information, contact Linda Manzanilla at Instituto de Investigaciones Antropológicas, UNAM-Cd. Universitaria, 04510 México D.F., fax (52-5) 622-96-51, email lmanza@servidor.unam.mx.

September 8 - 14, 1996
THE XIII INTERNATIONAL CONGRESS OF THE UNION OF PREHISTORIC AND PROTOHISTORIC SCIENCES will take place in Forlì, Italy. For more information, please contact Sarah Milliken, c/o Segreteria XIII Congresso U.I.S.P.P., Via Marchesi, 1, 47100 Forlì, Italy, fax 39-543-35805.